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Journal of Experimental Education

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SITUATIONAL FACTORS IN TEACHER PLACEMENT AND SUCCESS

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SECTION I

Introduction

Many studies have been made of the relationship of various factors to teaching efficiency. Some of these factors are a part of the individual teacher. They are variously designated as intelligence, physique, health, personal traits, skills, attitudes, knowledges, and abilities. The overwhelming majority of factors thought to influence teaching success has thus been assumed to lie within the individual teacher or to be possible of possession by her.[1]

Just as individual teachers differ in many ways so do all schools and communities differ. Some schools are progressive while others are conservative; some communities are friendly, others aloof; some are tolerant, others exacting. Population makeup, wealth, cultural status, and many other factors create differences in schools and communities. Every school and community is unique just as every individual person is unique.

It is logical to suggest, then, that some of the factors influencing teaching success might possibly lie outside the teacher's control and not be possible of possession by her. It is the writer's belief that any prediction of a teacher's success must consider this important variable, namely, the situation into which that teacher is placed. Possession of certain factors commonly associated with teaching success is not sufficient to predict success; factors which predict success might be conditioned by the teacher's compatability with her teaching environment.

Numerous instances of an apparently well-trained and well-qualified teacher failing in one community while succeeding in another can be cited by superintendents and placement officials. In a letter to this writer, one placement official says in this regard:

> "There are good, old-fashioned teachers though they may be young chronologically, who will do really a good piece of work in an environment where that sort of teaching is cherished, but who will be, if not a failure, very unhappy and dissatisfied in an atmosphere of experimentation and progress."

Another placement official writes, in pointing out placement problems for this particular study:

> "How can we know school conditions and the types of teachers needed in particular school systems? What I am getting at is that one teacher will make good in one school situation and be a failure in another."

Further recognition is given to the part the situation may play in a teacher's success by Barr in a progress report of research on teaching efficiency:[2]

> "It is perfectly clear to the investigators that teaching in the modern school involves much more than guidance of learning activities. It involves many import-

* The author wishes to express his appreciation to the many persons who generously contributed their time and experience to this investigation, including Dr. A. S. Barr, his advisor.

1. A. S. Barr and others. "The Measurement and Prediction of Teaching Ability: A Summary of Investigations," Journal of Experimental Education, XVI (June 1948).

2. A. S. Barr, "Impressions, Trends, and Further Research," Journal of Experimental Education, XIV (December 1945), p. 200.

ant teacher-pupil relations; teacher-teacher relationships, teacher-administrator relationships, and teacher-community relationships and the many important responsibilities growing out of these. These relationships will limit in a significant respect the teacher's success in a given situation and ultimately affect pupil growth and achievement."

Everyone wants success but if the situation is a deterrent to that success, as suggested above, only by avoidance of the unsatisfactory situation might a teacher be considered successful. In order to avoid it she must be aware of it in advance. This problem seems to the writer to be the responsibility of the placement services, but the purpose of this study is to investigate situational factors rather than placement procedures.

The teaching situation is a complex of many factors anyone of which might result in teacher maladjustment and possible inefficiency. Placement has, in the past, been largely a one-way process in which the employing official received much information about the candidate but the employee had only a meager description of the school and community on which to make a judgment. In the absence of such information the applicant, in the face of certain circumstances, allowed the decision to be made for him, to accept placement in an unknown situation. "School-community credentials" in addition to teacher credentials, which would give the candidate information he sought and which would allow him to exercise his own preferences, might thus be a wise addition to the placement process if it could be established that the teaching situation affected teaching efficiency.

It seemed worthwhile accordingly to attack the problem of teacher compatability with her teaching situation and its relationship to teaching efficiency.

During the preliminary work which was carried on by the author in the development of the problem, thirty-two placement officials from widely scattered parts of the United States were told of a probable study in placement. They were asked to state the problems in that area as they saw them which might lend themselves to research. Twenty officials responded and suggested twenty-four areas for research. The fact that six of the twenty-four problems suggested are related to the problem of this study further establishes its importance. Those six problems were:

1. What do candidates want to know about a community prior to employment?

2. How can we know school conditions and types of teachers needed in particular school systems?

3. What should be the content of a job description?

4. How do teaching conditions, living conditions, salaries, etc., vary in different sized schools?

5. What should be the nature of field variations?

6. How successful are in-service adjustment programs?

The reader is also reminded that induction programs for beginning teachers, a practice gaining in importance recently, is a tacit admission of the importance of the teaching situation to teaching success. However, more accurate placement may reduce the necessity for such programs.

An analysis of the main problem suggests the following specific questions which this study will attempt to answer:

1. With what degree of success are these teachers placed in terms of teacher satisfaction under the more or less one-way process that now prevails?

2. With what situational factors are these teachers satisfied? It is popularly believed that teachers must endure unusual living conditions, unjust social taboos, poor working conditions, and an antagonistic community. At least, many prospective teachers just entering training have come to the writer with such beliefs. It would seem that if some situational factors can be found to be satisfactory, their elimination from consideration would ease the problem of placement and indirectly be an aid to teacher recruitment.

2a. With what situational factors are these teachers dissatisfied, or unsatisfied? Are there factors which exist toward which these teachers have difficulty adjusting? Since communities and their schools differ in so many ways and since teachers, because of their past experiences, differ widely in their likes and dislikes it is possible that such factors can be found. Because the situation cannot be changed to suit the preferences of the teacher, it is necessary that the teacher make the adjustment. It would seem that these factors which teachers find unsatisfactory have been responsible for inaccurate placement and, if they can be identified, more consideration can be given them in the placement process.

2b. With what situational factors are these teachers unconcerned? If such factors can be identified, their elimination from consideration by either placement official or applicant would reduce the problem of placement.

3. What situational factors seem critical to placement satisfaction for this group? After satisfactory and neutral factors have been eliminated,

are there some, by reason of a variety or balance of satisfied and unsatisfied responses which might be termed "critical?" These factors, which the teachers might want to have known about prior to acceptance of the position, could well be included in "School-Community credentials" to make placement a two-way process. At least such critical factors might well be given greater consideration in the placement process.

4. What teacher backgrounds seem related to successful placement and to critical situational factors? Is there an age group among these teachers which either has more difficulty adjusting, or which does not adjust to certain situational factors? Are there any differences in satisfaction on the basis of sex, major preparation, residence, family status, or other backgrounds? It would seem that answers to such questions might make it more possible to predict teacher satisfaction with more accuracy and thus predict teaching success.

5. What relation exists between placement satisfaction and teaching success in this group of teachers? The answer to this question will either substantiate the need for more accurate consideration of the teaching situation, or it will show such consideration to be unnecessary. It is generally contended that there exists a positive correlation between the degree of teacher compatability with her teaching situation and the degree of teaching efficiency. The same contention has been implied in previous investigations and in the literature of teacher education.

6. To what degree can placement satisfaction be predicted? Is the right kind of information about prospective teachers being assembled that can lead to more successful placement? What kind of data needs to be collected to help prediction of placement satisfaction? It would seem extremely helpful to placement officials if this could be done.

The complexity of the problem limits this study to one of description only. It will be further limited by the inventory technique of gathering data. An inventory seemed necessary to describe the many aspects of situations to which teachers must react. The conclusions are also restricted to a select group of beginning teachers who respond somewhat willingly to questionnaires. It is likely that results would change had a greater percentage of return been obtained.

SECTION II

General Design of the Study

In general design, this study is a descriptive investigation. The individuals chosen for study were 72 teachers graduated from the University of Wisconsin in June, 1948, and representing a variety of background and experience.

Included in this group were thirty-one men and forty-one women, ranging in age from 21 to 33 years. Within this range, thirty-one teachers were in the 21-22 age group, fourteen were in the 23-24 year group, ten were 25-26 years old, and seventeen were 27-33 years of age.

Of the total group, ten had majored in Home Economics; sixteen had majored in Language Arts which included English and Foreign Languages, and two in Journalism; twelve had majored in either Mathematics or Science areas (these two fields were combined because of their close association in the placement picture and, too, men constituted the total group). Thirteen teachers of the 72 had majored in Social Science in college, six in Physical Education, and fifteen made up the final group on Miscellaneous Major Preparation. This latter group included two in Agriculture, four in Commerce, four in Art, three in Child Development, and two gave no indication of major preparation except to report 'high school teaching'.

Of the 72 teachers studied, eighteen had minored in Languages (English, Foreign Languages, Journalism), twenty-two in the Sciences, seventeen in the Social Sciences, and fifteen in various other fields (Fine Arts, Mathematics, Commerce, Child Development, and Home Economics).

Included also in the total group were six without siblings, 22 with only one, 23 with two or three, and 21 with four or more brothers or sisters. Twenty of the group were the youngest of the siblings, twenty-one held intermediate rank, and twenty-five were the oldest of the siblings.

Forty of the total group had no younger brothers while 32 had one or more. On another grouping 40 had no older brothers although 32 had one or more. Forty-three teachers had no younger sisters while 29 had one or more and 42 had no older sisters although 30 had one or more.

With reference to residence with parents, thirty-one had lived with them 1-19 years while forty had resided with parents 20 years or more. Thirty-three had never maintained a residence separate from the parents although 38 had resided independently for one year or more.

Twenty of the teachers studied had resided mainly in rural communities (farm and village population to 500), fourteen lived most of the time in communities 500 to 10,000 population, twenty-eight in cities of 10,000 to 100,000 population while ten had resided mainly in cities over 100,000 population. There were 31 whose families had never moved, 30 who had moved one, two, or three times, and 11 whose residence had been changed four or more times.

Thirty-one teachers had mothers who had attended all or some elementary grades only; twenty had mothers who had either attended high school or had been graduated from high school; twenty-one had mothers who had either attended

college or were graduated therefrom. Twenty-nine of the fathers had some or all of an elementary school education, twenty had either attended or graduated from high school, and twenty-one had a college degree or had attended college one or more years.

Twenty-three had mothers who had not been gainfully employed outside the home while 30 stated that their mother had worked outside the home one or more years. The parents of twenty-three teachers had been married 25 years or less; parents of twenty-six had been married 26 to 30 years, and those of twenty-one other teachers had been married over 30 years.

Eight teachers came from homes whose family income was less than $2500, twenty-three came from families whose total income was between $2500 and $5000, and thirteen were members of families whose income was over $5000.

Forty-three of the teachers had attended only one elementary school while 28 others had attended two or more different schools. Forty-one had attended only one college while 30 had been students in two or more colleges.

Twenty-four teachers had maintained some degree of self-support in high school while forty-seven had been entirely dependent upon others for support. In college, thirty-three were more than half self-supporting but thirty-eight were less than half independent.

Sixteen teachers had made no trips over 500 miles away from home but twenty-five had made 1-3 such trips, and eighteen had traveled over 500 miles from home on four or more occasions. Twenty-seven of the group had already held 0-3 different jobs for pay, twenty-nine had already worked in 4 or 5 different positions, while sixteen had already had six or more different jobs for pay.

Fifty-seven teachers in the group studied were single while fourteen were married. Sixty-two had no dependents although 10 had one or more. The total group included thirty veterans and forty-two non-veterans.

Twenty-one teachers had, in their lifetime, joined 0-2 clubs or social groups, twenty had joined 3-7, while eighteen had affiliated with 8 or more organizations. However, 13 belonged to no clubs at the time of investigation; 32 belonged to only one or two, while 23 still belonged to three or more groups.

Only eight of the total group had had no months experience working with youth in Sunday Schools, playground, 4-H work, etc., but twenty-two had had 1-10 months experience, sixteen had 11-25 months experience, and twenty-four reported that they had spent over 25 months in some type of youth leadership other than teaching. Of the types of leadership reported, twenty-one had done tutoring, twenty-four had worked in various religious capacities, thirty-one had been engaged in Scout work, camp counseling or 4-H, and forty-two had held some class or organization office in high school.

Of these seventy-two teachers studied, fourteen were placed in communities of under 1000 population; thirteen were placed in communities of 1001-2000; fourteen found positions in places having a population between 2001 and 5000; fifteen went to cities between 5001 and 15,000; while sixteen went to school located in cities of over 15,000 population.

In comparing size of community from which each teacher came with size in which each was placed, it was found that sixteen had lived mainly in communities under 4000 population and had been placed in similar communities; twenty-one had lived principally in cities over 4000 population and had been placed in a like community. However, thirteen had lived mainly in communities under 4000 but were placed in communities over 4000 while twenty-one who had resided mainly in cities over 4000 were placed in situations having less than 4000 population.

The general plan of this study called for teacher reactions to a Teaching Situation Inventory as a measure of the degree of satisfaction felt toward placement. Scores obtained from totaling the responses of satisfaction, dissatisfaction, and indifference were to be the basis for a detailed description of placement satisfaction. It was also necessary to procure a supervisory rating of teaching efficiency for every teacher who responded to the Inventory to establish the relation between placement satisfaction and teaching success.

The main data-gathering instrument used was a Teaching Situation Inventory developed for this study after much inquiry and preliminary trial.

The situation was defined as including aspects of the community as well as the school. In all, nine categories of situational factors were established, all of which, in one way or another, acted to define the total teaching situation. These categories were:

Section I.	The Community
Section II.	The People of the Community
Section III.	The School Plant
Section IV.	The School Administration
Section V.	The School Organization
Section VI.	The Instructional Materials
Section VII.	The Faculty
Section VIII.	The Students
Section IX.	The Particular Position

An attempt was made to choose situational factors under each category which were objective in nature or were easy of description. It was thought that objective items which the teacher could measure or were clearly evident to her would yield more reliable responses of satisfaction or dissatisfaction than if such factors were

purely subjective.

Thus, provision was made for the respondent to describe the factors which were satisfactory as well as those which were unsatisfactory. Also, as a check against what was held to be satisfactory by the teacher, provision was made for unsatisfactory items to be "corrected" as she thought it should be. In this way, all factors would be described to show what teachers would want if satisfactory placement were achieved on all factors.

It might be said here that this resulted in a very long inventory and one which entailed considerable time to complete. The items selected for the Inventory were obtained from several sources. Twenty-six special community indices for measuring the progressiveness of a community is listed by Hayes.[3] Other indices are suggested by Thorndike[4] in his list of 297 indices which he used in measuring community liveability. Cook and Cook[5] comments on these indices as follows:

> "Whatever may be said in criticism of Thorndike's work, he has objectified the feel for area difference which every schoolman knows. Here is a good place to live and teach, a place with marked community spirit while there, over the hill a few miles away, is the reverse."

To this master list was also added the factors suggested by the Cooperative Study of Secondary School Standards.[6]

A request was also made to teachers to supply factors for the Inventory. The following note was mailed to one hundred teachers in as many Wisconsin public schools of which 42 replied:

> "Assume that you have been offered a new position in a different school system. What factors would you want to know about in the new community, the school, of the faculty, the students, or the position before wanting to go there to teach? List as many as you will in space below.
>
> Will you star (*) those factors which would have to be entirely satisfactory to you before you would accept the position."

In like manner the following request was made of one hundred principals or superintendents in Wisconsin public schools, 37 of whom responded:

> "List below the factors, or conditions, in a school or the community which, in your judgment, requires some adjustment on the part of a teacher. Try to recall those problems of adjustment which some teacher has had in your past experience, as well as those which a new teacher might encounter in your school or community."

From the above sources a composite list of all possible factors of the school and community were drawn up. From this list, then, duplications were eliminated. The remainder was considered by the author and other graduate students of Education for item relevancy to the teacher's adjustment. The final result was a list of 316 factors classified according to the foregoing categories. These 316 situation factors comprise the Teaching Situation Inventory. An attempt was made to state the item so that it might be counted, observed, and described. However, some degree of judgment was required on many and objectivity was lost to that degree, particularly when the requested description of each item was also omitted.

Teacher satisfaction with the situation was adopted as the measure of the degree of placement accuracy. An instrument was established whereby responses to the situational factors might be recorded. The instrument was patterned after the one used in the studies by Garrison[7], and McClusky and Strayer.[8] The following values and their definition were made a part of the Inventory:

+2 Those factors which are extremely satisfactory, highly agreeable, very advantageous.

+1 Those factors which are mildly satisfac-

3. Wayland Jackson Hayes, The Small Community Looks Ahead, (New York: Harcourt, Brace & Co., 1947).

4. E. L. Thorndike, Your City (New York: Harcourt, Brace & Co., 1939).

5. Lloyd Allen Cook and Elaine Forsythe Cook, A Sociological Approach to Education (New York: McGraw-Hill Book Co., 1950), p. 66.

6. Evaluative Criteria, Cooperative Study of Secondary School Standards (Washington, D.C.: 744 Jackson Place, 1940).

7. K. C. Garrison, "Comparative Responses of Teachers and Student Teachers to Various Items on the Teaching Situations Test," Elementary School Journal, XLV (February

tory or agreeable but not extremely so; fairly advantageous.

0 Those which are neutral—which do not affect your liking or disliking the situation.

-1 Those factors which are mildly unsatisfactory, disagreeable but not extremely so; some disadvantages.

-2 Those factors which are extremely unsatisfactory, highly disagreeable, very disadvantageous.

It was planned to make the algebraic sum of the teacher's responses to the Inventory the measure of her placement accuracy or satisfaction. However, it may be said here, such a plan was later rejected on the grounds that the differentiation between +2 and +1 and between -2 and -1 could not be defended as reliable. In the final analysis only plus, minus, and zero responses were considered; no distinction was made between the +2 and +1 responses or between the -2 and -1 responses. Algebraic sums were likewise abandoned in favor of a total number of positive, negative, or zero responses.

In November, 1948, the Teaching Situation Inventory was sent out to 209 beginning teachers who had been graduated from the University of Wisconsin School of Education the preceding June. The majority of these teachers had found positions in Wisconsin but some had gone to other states. One-eighth of the Inventories were returned from states other than Wisconsin. Illinois, Michigan, Oregon, Montana, New Mexico, and Arkansas were all represented by one or more returns.

The follow-up requests were sent out during January and March of 1949 and 79 teachers responded, a return of thirty-four percent which constituted the special group here investigated. Of this number seven Inventories were too incomplete to be used. The remaining 72 Inventories formed the basis for this study.

From the files of the Teacher Personnel Research Bureau at the University of Wisconsin School of Education supervisory ratings were obtained on some of these same teachers. Personnel requests and telephone calls were successful in obtaining supervisory estimates of the teacher's success on all others. Thus, for all teachers who responded to the Inventory, a supervisory rating was obtained to serve as the criterion against which the teacher's placement satisfaction might be correlated.

The decision to use supervisory ratings as the criterion of teaching success was one of expediency. Their weaknesses are recognized in this study and any attempt to arbitrarily defend them would be futile. Their use, however, continues and, until the complexities of teaching ability can be measured more accurately, the superintendent or supervisor is in a comparatively better position to judge a teacher's success or failure than is any other individual.

The average rating given on the Wisconsin Adaptation, M Blank, was taken for those teachers on whom a rating had been filed with the Teacher Personnel Research Bureau. The same 5-point scale with identical definitions was used in letters to other supervisors. One general overall rating was requested rather than ratings on several aspects of teaching ability.

Analysis was done on a strictly descriptive basis except that a correlation technique was used in relating total scores to ratings of teaching success. The number of positive responses was determined for each respondent and this total constituted that teacher's "Satisfaction Score." In like manner, "Neutral Scores" and "Unsatisfactory Scores" were obtained for each respondent.

Similarity of analysis was directed toward each situation factor. That is, "Factor Scores" were found by totaling the positive or satisfactory responses to each factor, and also by totaling the zero and negative responses to each factor. Omissions were counted to serve as a check on the correctness of the other totals.

The background data sheet at the beginning of the Inventory served to establish groups of teachers alike in one respect. The data called for on this sheet was arbitrarily determined by the writer and contained items believed to have some relation to a teacher's ability to adjust to situations. In the analysis of this section, Satisfaction Scores of all teachers in one group were totaled to yield a "Group Satisfaction Score." Likewise, "Group Neutral Scores" and "Group Dissatisfied Scores" were obtained. Omissions were again counted to serve as a check on correctness.

A further breakdown of the data was possible when the groups were ranked on the basis of Satisfaction Scores and Extremely Satisfied groups were identified. Similarly, Extremely Neutral and Extremely Dissatisfied groups were ascertained. The extremes were determined by choosing the four groups which exceeded the others in

1945), pp. 334-339.

8. Howard Y. McClusky and Floyd J. Strayer, "Reactions of Teachers to the Teaching Situation: A Study of Job Satisfaction," School Review, XLVIII (October 1940), pp. 612-623.

each category. For each extreme group it was possible to sum their satisfactory, neutral, and dissatisfactory responses toward each situational factor. This was done in the hopes of identifying certain situational factors which could be associated with a specific background item.

In all tables raw scores are shown as well as the conversions to percentages. Satisfactory, Neutral, and Unsatisfactory responses are shown.

Additional data was available for purposes of making some case studies of extreme individuals. Just as extreme groups were identified, so all individual teachers were ranked on the basis of Satisfaction Scores to identify the five Extremely Satisfied Teachers. Likewise, the five Extremely Neutral Teachers and the five Extremely Dissatisfied Teachers were discovered. These extreme individuals then became the subjects for case studies. The files of the Teacher Personnel Research Bureau were used in compiling information for the case studies as were records in the office of the Registrar, University of Wisconsin. This additional data consisted of grade-point average, an autobiography which the teacher had written while in school, a more complete background data booklet, practice teaching reports, and occasional themes collected by the Bureau and available to all researchers.

SECTION III

Analysis and Interpretation of Data

As stated above, seventy-two Teaching Situation Inventories and seventy-two supervisory rating sheets (in most cases the M-Blank was used) provided the data for this study. The analysis of these data was directed toward the solution of specific questions which have already been stated in Section I.

The reader may want to consult the tables for reactions of specific groups and individual teachers to any given situational factor. It is the writer's belief that the tables contain much more specific information than can be profitably enumerated in a verbal analysis.

1. With what degree of success are these teachers placed?

To answer this first question it will be necessary to accept the degree of teacher satisfaction as the criteria of successful placement. It must be pointed out, too, that data from this study can only point to how well the seventy-two teachers herein inventoried were placed. How well teachers in general are placed cannot be answered from these data.

Assuming that a teacher who responded that all 316 situational factors were satisfactory is correctly or perfectly placed, any teacher, then, whose Satisfaction Score is below 316 is, in some respect or respects, incorrectly placed. On that basis all 72 teachers herein inventoried would have to be judged as incorrectly placed (see Table IV for raw Satisfaction, Neutral, and Unsatisfied Scores of each teacher). Satisfaction scores ranged from 298 down to 10, with a median of 166.5.

Any attempt to evaluate placement practices and results against such a perfect standard is, in one sense, unfair. We can also assume that a teacher who is more satisfied with her placement than either neutral toward or dissatisfied with it is also, to a degree, correctly placed. By such a standard, then, any teacher who had a Satisfaction Score of 159 or above would be correctly placed. Of the seventy-two teachers, 39 or 54.16 percent had Satisfaction Scores of 159 and above. As contrasted with this, 33 or 45.84 percent had Satisfaction Scores of 158 and below. By this standard, then, more than half of the teachers in this study were correctly placed.

The following distribution of Satisfaction Scores can be shown to set up addtional standards against which to judge the correctness of placement:

Satisfaction Scores	No. Teachers
238-316	8
159-237	31
80-158	25
1- 79	8

Thus, if the reader wished to assume that to be correctly placed, a teacher would have to respond with satisfaction toward three-fourths of the factors in the Inventory, then only eight teachers, or 11 percent were correctly placed. Or, if satisfaction on only one-fourth of the situational factors would be required, 64 or 89 percent of the teachers were correctly placed.

There is some evidence in the above that some teachers are being placed satisfactorily to them even by the more or less one-way process referred to earlier. The evidence also shows that many teachers are not correctly placed if their satisfaction with the situation is accepted as the criterion of correctness. It follows then that the minor emphasis on the teaching situation in the process of placement may have caused some incorrect placement.

A corollary to the wide range of satisfaction found among the 72 teachers in this study might be to inquire how neutral they felt toward the situational factors in the Inventory as well as what degree of dissatisfaction was expressed. The scores of neutrality and scores of unsatisfaction in Table IV also show a wide range. Scores of Neutrality ranged from 0 to 253 with a median of 54.5. Similarly, Unsatisfaction (dissatisfaction)

Scores ranged from 2 to 189 with a median of 42.5. It must be remembered that a teacher's response of satisfaction, for example, to any given factor eliminated the possibility of also giving the same factor a neutral or unsatisfaction response.

Thus, while fifty-five or 76 percent of the teachers in this study were more satisfied than dissatisfied or indifferent, fourteen or 20 percent were more neutral than satisfied or dissatisfied, and three only, or 4 percent, were more dissatisfied than neutral or satisfied.

The teachers involved in this study were more satisfied with their teaching situation than they were neutral toward it or dissatisfied with it. The range of responses attest to the fact, however, that either the situational factors differ among communities or that teachers differ in their reaction to a like factor or both. It would be fair to say, this writer believes, that some degree of success in placement is being achieved even though major emphasis is not now being put on consideration of the teaching situation.

2. With what situational factors were teachers in this study satisfied?

The total number of satisfactory responses to each situational factor was ascertained. Of the 316 factors in the Situation Inventory, 253 each received a higher number of responses of satisfaction than of responses of either neutrality or dissatisfaction. More teachers gave responses of neutrality rather than of satisfaction or dissatisfaction to 51 factors; only 12 of the factors received more responses of dissatisfaction.

Table I shows raw scores and percentages of all responses. Table Ia identifies those factors for which over 75 percent of the teachers responded with satisfaction, those for which over 50 percent responded satisfactorily, and those for which 25 percent responded in like manner.

Over 75 percent of the teachers in this study gave responses of satisfaction to 24 situational factors:

1. The State it (placement) is in
2. The Section of the State it is in
3. Adequacy, condition of highways
4. The diversity of churches
5. The type of living quarters found
6. The location of living quarters
7. The modernness of living quarters
8. Restrictions, regulations on living quarters
9. The degree of privacy afforded in living quarters
10. The friendliness of the people of the community
11. Convenience of location of school plant
12. Appearance of school grounds
13. Cooperativeness of custodians with faculty
14. Age of superintendent
15. Educational philosophy of superintendent
16. Vacations allowed during school year
17. Length of noon hours
18. Number WEA, NEA memberships
19. Provisions for sick leave
20. Friendliness of faculty
21. Helpfulness and cooperation of faculty
22. Friendliness of students
23. The degree of independence allowed by administration
24. The frequency of salary payments

Contrary to popular belief, it is evident from the above that living conditions for these teachers were adequate. If over 75 percent of the teachers in this study found living conditions satisfactory, it is probable that many other teachers will find them so. Unusual restrictions or regulations of living quarters were not encountered by most of the teachers in this study; it seems that Wisconsin graduates need not fear such restraints. Friendliness of all people with whom these teachers came into contact was given a response of satisfaction by over 75 percent of these teachers. Also contrary to belief of some, the educational philosophy of the superintendent was found to be satisfactory by over three out of four teachers in this group.

Further examination of Table Ia will reveal numerous other factors of the situation which were found satisfactory by over half of the teachers. Factors concerning churches, meal accommodations, community demands on teachers, administrative policies, curriculum, teachers' meetings, instructional materials, faculty, teaching load, and salary all received responses of satisfaction by 50 percent or more of the teachers. This is evidence that these situational factors may not require as much adjustment as many people believe.

In all, over fifty percent of the teachers in this study gave responses of satisfaction to 175 of the factors included in the Inventory and over 25 percent of them found 291 factors satisfactory. The reader will, by examination of Table I or Table Ia, be able to identify specific factors found to be satisfactory together with the exact percentages of teachers in this study so responding to each.

It is fairly evident that some situational factors are not critical in the sense that placement officials and applicants need to examine them closely prior to placement; teacher adjustment to these factors evidently is easily made. It must be remembered that the respondents were first year teachers who tend to be more satisfied; more experience might prove them to be more critical and less satisfied.

TABLE I

TOTAL RESPONSES OF ALL 72 TEACHERS TO INDIVIDUAL ITEMS IN SITUATION INVENTORY

Situation Items	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
	raw	%	raw	%	raw	%	raw	%
SECTION 1: THE COMMUNITY								
LOCATION								
The State it is in	67	93.0	3	4.2	2	2.8	0	0
The Section of the State it is in	59	81.9	4	5.5	9	12.5	0	0
Distance from home in miles	44	61.1	7	9.7	20	27.8	1	1.4
SIZE								
The population	47	65.3	12	16.6	13	18.0	0	0
The area, spread	33	45.8	25	34.7	13	18.0	1	1.4
ACCESSIBILITY								
Adequacy, condition of highways	60	83.3	4	5.5	7	9.7	1	1.4
Convenience of bus schedules	31	43.0	10	13.9	30	41.6	1	1.4
Convenience of train schedules	24	33.3	15	20.8	32	44.4	1	1.4
ADJACENCY								
Nearness to shopping centers	50	69.4	6	8.3	14	19.4	2	2.8
Nearness to friends and relatives	36	50.0	15	20.8	20	27.8	1	1.4
To other centers of interest	41	56.9	14	19.4	16	22.2	1	1.4
GEOGRAPHY								
Its range in temperature	39	54.2	19	26.4	14	19.4	0	0
Its degree of humidity	37	51.4	24	33.3	10	13.9	1	1.4
Its topography	42	58.3	29	40.3	1	1.4	0	0
COMMUNITY APPEARANCE								
Its cleanliness	52	72.2	11	15.3	9	12.5	0	0
Extent of new, modern buildings	32	44.4	21	29.2	19	26.4	0	0
Evidence of planning, orderliness	27	37.5	23	31.9	22	30.6	0	0
INDUSTRIES OF COMMUNITY								
The types found there	29	40.3	26	36.1	16	22.2	1	1.4
Their contribution to progress	25	34.7	27	37.5	16	22.2	4	5.5
COMMUNITY INSTITUTIONS								
The diversity of churches	56	77.7	12	16.6	4	5.5	0	0
Activity of churches	43	59.7	24	33.3	5	6.9	0	0
Availability of your denomination	46	63.9	12	16.6	14	19.4	0	0
Its schools other than public	29	40.3	33	45.8	7	9.7	3	4.2
COMMUNITY HEALTH SERVICES								
Availability of good doctors	53	73.6	11	15.3	5	6.9	3	4.2
Availability of good dentists	50	69.4	14	19.4	5	6.9	3	4.2
Convenience to hospitals	44	61.1	4	5.5	21	29.2	3	4.2
PUBLIC LIBRARY								
Its convenience of opening hours	39	54.2	11	15.3	21	29.2	1	1.4
Its adequacy of materials	36	50.0	10	13.9	21	29.2	5	6.9
Its recency in materials and books	35	48.6	15	20.8	17	23.6	5	6.9
FRATERNAL ORDERS								
Their degree of activity	30	41.6	38	52.8	1	1.4	3	4.2
Their appropriateness to you	17	23.6	46	63.9	5	6.9	4	5.5
Their attitude toward teachers	27	37.5	39	54.2	2	2.8	4	5.5

TABLE I (Continued)

Situation Items	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
	raw	%	raw	%	raw	%	raw	%
SOCIAL GROUPS, COMMUNITY CLUBS								
Their diversity	27	37.5	31	43.0	11	15.3	3	4.2
Their purposes for organization	27	37.5	33	45.8	10	13.9	2	2.8
Their availability to teachers	32	44.4	25	34.7	14	19.4	1	1.4
Their contribution to community	31	43.0	30	41.6	9	12.5	2	2.8
LIVING QUARTERS IN COMMUNITY								
The type you found available	62	86.1	1	1.4	8	11.1	1	1.4
Suitability of its location	64	88.8	1	1.4	5	6.9	2	2.8
Modernness of its convenience	59	81.9	4	5.5	7	9.7	2	2.8
Restrictions, regulations asked	63	87.5	3	4.2	4	5.5	2	2.8
Degree of privacy provided	63	87.5	2	2.8	5	6.9	2	2.8
MEAL ACCOMMODATIONS								
Type found available	46	63.9	5	6.9	16	22.2	5	6.9
Quality of the food	54	75.0	9	12.5	6	8.3	3	4.2
Convenience of location	46	63.9	6	8.3	14	19.4	6	8.3
LIVING COSTS IN THE COMMUNITY								
The rentals you must pay	51	70.8	3	4.2	17	23.6	1	1.4
Prices paid for meals, groceries	43	59.7	5	6.9	22	30.6	2	2.8
Prices of clothing	29	40.3	27	37.5	11	15.3	5	6.9
Prices of sundries	36	50.0	25	34.7	6	8.3	5	6.9
DISTINCTIONS OF COMMUNITY								
Its notable characteristics	28	38.9	35	48.6	7	9.7	2	2.8
Its recognition by outside world	27	37.5	33	45.8	9	12.5	3	4.2
Laurels and prestige it has earned	18	25.0	41	56.9	9	12.5	4	5.5
COMMUNITY CULTURAL OPPORTUNITIES								
Its stage and concert offerings	21	29.2	8	11.1	41	56.9	2	2.8
Its museums, galleries, zoos	10	13.9	10	13.9	51	70.8	1	1.4
Its public forums and lectures	17	23.6	13	18.0	41	56.9	1	1.4
LEISURE TIME OPPORTUNITIES								
Commercial amusements available	29	40.3	14	19.4	29	40.3	0	0
Types of recreation available	37	51.4	7	9.7	28	38.9	0	0
EXTRA JOB OPPORTUNITIES								
Types of extra jobs available	10	13.9	39	54.2	16	22.2	7	9.7
Probable wage levels	11	15.3	38	52.8	16	22.2	7	9.7
Openings for summer employment	12	16.6	41	56.9	11	15.3	8	11.1
FINANCIAL STATUS OF COMMUNITY								
Its property valuation	34	47.2	21	29.2	5	6.9	12	16.6
Its tax rate for school purposes	25	34.7	27	37.5	8	11.1	12	16.6
Its indebtedness	22	30.6	35	48.6	2	2.8	13	18.0
COMMUNITY DEMANDS ON TEACHERS								
Community responsibilities	49	68.0	20	27.8	3	4.2	0	0
Social taboos, bans on behavior	47	65.3	15	20.8	10	13.9	0	0
Expectancies of residence	44	61.1	21	29.2	4	5.5	3	4.2

TABLE I (Continued)

Situation Items	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
	raw	%	raw	%	raw	%	raw	%
COMMUNITY SERVICES								
Diversity of utilities	28	38.9	29	40.3	7	9.7	8	11.1
Adequacy of service	24	33.3	31	43.0	10	13.9	7	9.7
Cost to citizens	21	29.2	37	51.4	6	8.3	8	11.1
SECTION II: PEOPLE OF THE COMMUNITY								
STOCK OF THE PEOPLE								
The majority race	26	36.1	38	52.8	3	4.2	5	6.9
Predominate nationality	23	31.9	40	55.5	4	5.5	5	6.9
Minority nationalities	20	27.8	40	55.5	6	8.3	6	8.3
LANGUAGE OF THE PEOPLE								
Amount of foreign language spoken	24	33.3	28	38.9	11	15.3	9	12.5
Quality of everyday usage	18	25.0	20	27.8	29	40.3	5	6.9
OCCUPATIONS OF THE PEOPLE								
The types followed	24	33.3	25	34.7	17	23.6	6	8.3
The degree of diversity	23	31.9	22	30.6	20	27.8	7	9.7
PEOPLE'S ECONOMIC STATUS								
The average family income	36	50.0	18	25.0	10	13.9	8	11.1
The range of incomes	31	43.0	22	30.6	11	15.3	8	11.1
PEOPLE'S CULTURE								
Their general educational level	26	36.1	16	22.2	24	33.3	6	8.3
Their major political beliefs	22	30.6	33	45.8	11	15.3	6	8.3
Their major religious affiliations	23	31.9	38	52.8	6	8.3	5	6.9
Their interests in the arts	18	25.0	22	30.6	27	37.5	5	6.9
Their social graces, manners	25	34.7	20	27.8	20	27.8	7	9.7
PEOPLE'S COLLOQUIALISMS								
Behavior characteristics	22	30.6	36	50.0	5	6.9	9	12.5
Customs of unusual dress	20	27.8	44	61.1	1	1.4	7	9.7
Oddities of speech and expression	18	25.0	36	50.0	14	19.4	4	5.5
CHARACTERISTICS OF THE PEOPLE								
Their hospitality	49	68.0	9	12.5	12	16.6	2	2.8
Their friendliness	61	84.7	4	5.5	5	6.9	2	2.8
Their cooperation with the school	43	59.7	7	9.7	19	26.4	3	4.2
Their pride in home and community	54	75.0	11	15.3	5	6.9	2	2.8
SITE OF SCHOOL PLANT								
Its convenience to location	64	88.8	3	4.2	4	5.5	1	1.4
Its adequacy of playground	51	70.8	5	6.9	14	19.4	2	2.8
Its freedom from hazards	44	61.1	5	6.9	20	27.8	3	4.2
Its appearance of grounds	56	77.7	5	6.9	9	12.5	2	2.8
SCHOOL BUILDING								
Its type of construction	48	66.6	11	15.3	11	15.3	2	2.8
Its degree of modernness	41	56.9	6	8.3	22	30.6	3	4.2
Its adequacy of exits	53	73.6	8	11.1	9	12.5	2	2.8
Its provision for ventilation	46	63.9	10	13.9	14	19.4	2	2.8
Its provision for safety	47	65.3	11	15.3	12	16.6	2	2.8

TABLE I (Continued)

Situation Items	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
	raw	%	raw	%	raw	%	raw	%
HEATING OF THE BUILDING								
The type in use	50	69.4	13	18.0	7	9.7	2	2.8
Adequacy of performance	50	69.4	3	4.2	18	25.0	1	1.4
LIGHTING IN THE BUILDING								
The type in use	44	61.1	9	12.5	17	23.6	2	2.8
Adequacy of performance	43	59.7	4	5.5	24	33.3	1	1.4
Convenience for use	49	68.0	9	12.5	12	16.6	2	2.8
ROOMS IN THE BUILDING								
Adequacy of size	42	58.3	5	6.9	21	29.2	4	5.5
Appropriateness of decoration	37	51.4	10	13.9	21	29.2	4	5.5
Convenience of arrangement, plans	38	52.8	13	18.0	17	23.6	4	5.5
Ease for arrangement within	34	47.2	11	15.3	23	31.9	4	5.5
Freedom from disturbance	34	47.2	7	9.7	27	37.5	4	5.5
TOILETS IN THE BUILDING								
Their adequacy	47	65.3	8	11.1	15	20.8	2	2.8
Their condition	54	75.0	6	8.3	10	13.9	2	2.8
FLOORS OF BUILDING								
Material used	46	63.9	11	15.3	13	18.0	2	2.8
Their condition	52	72.2	7	9.7	11	15.3	2	2.8
FURNITURE IN BUILDING								
Its adequacy, amount	44	61.1	9	12.5	16	22.2	3	4.2
Its condition	39	54.2	9	12.5	22	30.6	2	2.8
Its utility, usefulness in school	40	55.5	11	15.3	18	25.0	3	4.2
FACULTY ROOMS								
The number of them	24	33.3	8	11.1	39	54.2	1	1.4
Degree of privacy afforded	26	36.1	12	16.6	33	45.8	1	1.4
Regulations for their use	22	30.6	23	31.9	26	36.1	1	1.4
CUSTODIAL SERVICE								
Its adequacy	54	75.0	8	11.1	7	9.7	3	4.2
Its competency	54	75.0	10	13.9	5	6.9	3	4.2
Its cooperativeness with faculty	56	77.7	10	13.9	4	5.5	2	2.8
SECTION IV: THE ADMINISTRATION								
THE BOARD OF EDUCATION								
General educational level	38	52.8	18	25.0	7	9.7	9	12.5
Its standing in the community	47	65.3	16	22.2	1	1.4	8	11.1
Its susceptibility to pressure	24	33.3	26	36.1	11	15.3	11	15.3
Its educational philosophy	31	43.0	20	27.8	10	13.9	11	15.3
Its rules and regulations	36	50.0	21	29.2	6	8.3	9	12.5
ACCREDITATION OF SCHOOL								
The professional body approving	35	48.6	21	29.2	4	5.5	12	16.6
The value of such approval	31	43.0	22	30.6	4	5.5	15	20.8
THE SUPERINTENDENT								
His age	57	79.2	11	15.3	1	1.4	3	4.2
His years in present position	51	70.8	10	13.9	4	5.5	7	9.7
His years training and degrees	50	69.4	13	18.0	2	2.8	7	9.7

TABLE I (Continued)

Situation Items	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
	raw	%	raw	%	raw	%	raw	%
His kind and amount of experience	50	69.4	13	18.0	2	2.8	7	9.7
His educational philosophy	55	76.4	6	8.3	7	9.7	4	5.5
His practices	49	68.0	5	6.9	13	18.0	5	6.9
PRINCIPAL (Omitted if same as Supt.)								
His age	34	47.2	5	6.9	3	4.2	30	41.5
His years in present position	30	41.6	6	8.3	3	4.2	33	45.8
His years training and degrees	29	40.3	8	11.1	1	1.4	34	47.2
His years of like experience	26	36.1	10	13.9	1	1.4	35	48.6
His educational philosophy	31	43.0	2	2.8	9	12.5	30	41.6
His practices	29	40.3	3	4.2	9	12.5	31	43.0
SUPERVISOR (Omitted if same as above)								
Years in present position	8	11.1	5	6.9	0	0	59	81.9
Years training, like experience	8	11.1	4	5.5	0	0	60	83.3
Educational philosophy	9	12,5	3	4.2	0	0	60	83.3
His practices, helpfulness	9	12.5	3	4.2	0	0	60	83.3
ADMINISTRATIVE POLICIES								
Standards for student promotion	41	56.9	15	20.8	8	11.1	8	11.1
Standards for student eligibility	41	56.9	17	23.6	5	6.9	9	12.5
Teacher experimentation research	39	54.2	17	23.6	10	13.9	6	8.3
Teacher tenure, seniority rights	35	48.6	21	29.2	7	9.7	9	12.5
Use of democratic procedures	46	63.9	14	19.4	6	8.3	6	8.3
THE SCHOOL YEAR								
Length in weeks	51	70.8	12	16.6	8	11.1	1	1.4
Time of opening in fall	54	75.0	10	13.9	8	11.1	0	0
Vacations allowed	56	77.7	7	9.7	9	12.5	0	0
Time of closing in spring	53	73.6	12	16.6	7	9.7	0	0
DAILY SESSIONS								
Hour of opening	53	73.6	11.	15.3	8	11.1	0	0
Length of periods	50	69.4	7	9.7	15	20.8	0	0
Length of noon hours	55	76.4	12	16.6	5	6.9	0	0
Hour of closing	54	75.0	11	15.3	6	8.3	1	1.4
SCHOOL GRADING SYSTEM								
The type used	46	63.9	13	18.0	12	16.6	1	1.4
Rigidity of its use	41	56.9	16	22.2	12	16.6	3	4.2
Importance it holds with pupils	38	52.8	11	15.3	20	27.8	3	4.2
SCHOOL CURRICULUM								
Broadness of its offerings	45	62.5	12	16.6	13	18.0	2	2.8
Adequacy for student needs	43	59.7	14	19.4	13	18.0	2	2.8
Requirements and electives	45	62.5	14	19.4	10	13.9	3	4.2
SCHOOL EXTRA-CURRICULUM								
Diversity, variety of offerings	51	70.8	11	15.3	9	12.5	1	1.4
Adequacy for student needs	47	65.3	13	18.0	10	13.9	2	2.8
Balance among activities	42	58.3	13	18.0	16	22.2	1	1.4
STUDENT GROUPING IN SCHOOL								
The bases used to group	28	38.9	25	34.7	12	16.6	7	9.7
Purposes for doing it	27	37.5	25	34.7	12	16.6	8	11.1

TABLE I (Continued)

Situation Items	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
	raw	%	raw	%	raw	%	raw	%
STUDENT CONTROL								
Type used in wnole school	40	55.5	17	23.6	12	16.6	3	4.2
Responsibility for maintaining	34	47.2	17	23.6	15	20.8	6	8.3
Nature of regulations imposed	33	45.8	17	23.6	16	22.2	6	8.3
SCHOOL ASSEMBLIES								
Their frequency	41	56.9	11	15.3	19	26.4	1	1.4
Their purpose	46	63.9	11	15.3	13	18.0	2	2.8
Their value to students	42	58.3	12	16.6	16	22.2	2	2.8
Responsibility for organizing	34	47.2	18	25.0	14	19.4	6	8.3
SCHOOL GUIDANCE OF STUDENTS								
Type and amount provided	30	41.6	12	16.6	26	36.1	4	5.5
Persons or person responsible	31	43.0	13	18.0	24	33.3	4	5.5
Aids available to teachers	23	31.9	18	25.0	27	37.5	4	5.5
PUPIL SERVICES								
Health provisions, examinations	37	51.4	10	13.9	23	31.9	2	2.8
Provisions for nutrition, lunches	39	54.2	7	9.7	23	31.9	3	4.2
Employment aids	27	37.5	23	31.9	17	23.6	5	6.9
TEACHERS MEETINGS								
Their frequency	48	66.6	8	11.1	16	22.2	0	0
Their purpose	47	65.3	7	9.7	17	23.6	1	1.4
Their procedure	42	58.3	15	20.8	14	19.4	1	1.4
Time of meeting	52	72.2	10	13.9	9	12.5	1	1.4
Value to participants	39	54.2	10	13.9	23	31.9	0	0
PUBLIC PROGRAMS BY SCHOOL								
Their frequency	37	51.4	19	26.4	11	15.3	5	6.9
Faculty responsibility for staging	31	43.0	22	30.6	13	18.0	6	8.3
SECTION VI: INSTRUCTIONAL MATERIALS								
SCHOOL LIBRARY								
Size, number of references	37	51.4	8	11.1	21	29.2	6	8.3
Adequacy for all areas	31	43.0	8	11.1	26	36.1	7	9.7
Recency of books and materials	36	50.0	11	15.3	19	26.4	6	8.3
Variety and range of difficulty	39	54.2	13	18.0	14	19.4	6	8.3
Suitability of periodicals	45	62.5	10	13.9	11	15.3	6	8.3
AUDIO-VISUAL MATERIALS								
Their appropriateness	52	72.2	9	12.5	8	11.1	3	4.2
Their condition, ease of operation	50	69.4	9	12.5	10	13.9	3	4.2
Regulations for use	50	69.4	10	13.9	8	11.1	4	5.5
Budget for materials	44	61.1	12	16.6	12	16.6	4	5.5
TEXT MATERIALS								
Their ownership	47	65.3	12	16.6	9	12.5	4	5.5
Their appropriateness	47	65.3	12	16.6	9	12.5	4	5.5
Their condition, age	38	52.8	11	15.3	18	25.0	5	6.9
CLASSROOM AIDS, LABORATORY								
Their adequacy	35	48.6	14	19.4	18	25.0	5	6.9
Their condition	33	45.8	15	20.8	18	25.0	6	8.3
Their appropriateness, utility	34	47.2	16	22.2	15	20.8	7	9.7

TABLE I (Continued)

Situation Items	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
	raw	%	raw	%	raw	%	raw	%
STANDARDIZED TEST MATERIALS								
Extent of use	26	36.1	22	30.6	11	15.3	13	18.0
Purposes of administration	30	41.6	24	33.3	5	6.9	13	18.0
Regulations for use	25	34.7	27	37.5	6	8.3	14	19.4
SUPPLEMENTARY MATERIALS								
Provision for class transportation	34	47.2	19	26.4	12	16.6	7	9.7
Provision for outside talent	29	40.3	19	26.4	13	18.0	11	15.3
For student extension courses	17	23.6	31	43.0	12	16.6	12	16.6
For indices of free materials	18	25.0	31	43.0	11	15.3	12	16.6
SECTION VII: THE FACULTY								
STRUCTURE OF THE FACULTY								
Total number of individuals	52	72.2	9	12.5	9	12.5	2	2.8
Average age	46	63.9	12	16.6	11	15.3	3	4.2
Age range	53	73.6	7	9.7	8	11.1	4	5.5
Sex distribution	44	61.1	16	22.2	10	13.9	2	2.8
Marital status	34	47.2	17	23.6	17	23.6	4	5.5
TRAINING OF FACULTY								
Average length in years	48	66.6	20	27.8	1	1.4	3	4.2
Percent having degrees	51	70.8	17	23.6	2	2.8	2	2.8
Appropriateness to position	47	65.3	17	23.6	4	5.5	4	5.5
Source, where taken	41	56.9	25	34.7	2	2.8	4	5.5
Recency of last attendance	42	58.3	22	30.6	5	6.9	3	4.2
FACULTY TEACHING EXPERIENCE								
Average number of years	40	55.5	21	29.2	4	5.5	7	9.7
Amount of local tenure	29	40.3	25	34.7	9	12.5	9	12.5
Range of experience in years	39	54.2	20	27.8	2	2.8	11	15.3
RESIDENCE OF FACULTY								
The percent living out of town	37	51.4	27	37.5	1	1.4	7	9.7
The percent living locally	47	65.3	20	27.8	2	2.8	3	4.2
The percent of home teachers	28	38.9	30	41.6	7	9.7	7	9.7
TENURE OF FACULTY								
Average length in this school	30	41.6	26	36.1	8	11.1	8	11.1
Percent of annual turnover	26	36.1	23	31.9	15	20.8	8	11.1
FACULTY PROFESSIONAL STATUS								
Number WEA, NEA memberships	55	76.4	12	16.6	2	2.8	3	3.2
Number Union memberships	17	23.6	40	55.5	6	8.3	9	12.5
Number of earned recognitions	12	16.6	45	62.5	6	8.3	9	12.5
Number having articles published	11	15.3	42	58.3	9	12.5	10	13.9
ASSISTANTS TO FACULTY								
Number available	18	25.0	25	34.7	19	26.4	10	13.9
Type of help provided	18	25.0	23	31.9	21	29.2	10	13.9
Competence of help	22	30.6	25	34.7	15	20.8	10	13.9
Regulations for use	13	18.0	32	44.4	15	20.8	12	16.6

TABLE I (Continued)

Situation Items	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
	raw	%	raw	%	raw	%	raw	%
SERVICES TO FACULTY								
Availability of group insurance	51	70.8	12	16.6	7	9.7	2	2.8
Provision for sick leave	59	81.9	7	9.7	5	6.9	1	1.4
Rules on emergency leave	44	61.1	18	25.0	4	5.5	6	8.3
Adequacy of professional library	25	34.7	17	23.6	24	33.3	6	8.3
SELECTION OF FACULTY								
Method used	40	55.5	17	23.6	7	9.7	8	11.1
By whom it is done	51	70.8	10	13.9	5	6.9	6	8.3
Bases for choice	37	51.4	23	31.9	5	6.9	7	9.7
EVALUATION OF WORK OF FACULTY								
Method of evaluation used	24	33.3	25	34.7	7	9.7	16	22.2
Purpose for it	24	33.3	26	36.1	5	6.9	17	23.6
Bases used in evaluating	20	27.8	28	38.9	6	8.3	18	25.0
The person doing it	27	37.5	24	33.3	5	6.9	16	22.2
FACULTY ACTIVITIES								
Extent in the community	38	52.8	17	23.6	10	13.8	7	9.7
Extent in social affairs	34	47.2	19	26.4	11	15.3	8	11.1
Extent of professional work	27	37.5	27	37.5	9	12.5	9	12.5
Extent in school policy making	35	48.6	15	20.8	14	19.4	8	11.1
FACULTY CHARACTERISTICS								
Their friendliness	66	91.6	3	4.2	1	1.4	2	2.8
Their helpfulness and cooperation	61	84.7	4	5.5	5	6.9	2	2.8
Their leadership	59	68.0	12	16.6	8	11.1	3	4.2
Their interests matching yours	49	68.0	12	16.6	9	12.5	2	2.8
SECTION VIII: THE STUDENTS								
STUDENT ENROLLMENT								
Total number	48	66.6	14	19.4	7	9.7	3	4.2
Majority sex	38	52.8	26	36.1	4	5.5	4	5.5
Teacher-pupil ratio	35	48.6	11	15.3	22	30.6	4	5.5
Class distribution by year	36	50.0	19	26.4	9	12.5	8	11.1
STUDENT RESIDENCES								
Distance from school	29	40.3	13	18.0	29	40.3	1	1.4
Condition of homes	36	50.0	20	27.8	12	16.6	4	5.5
STUDENT PERFORMANCE								
Persistency of attendance	39	54.2	10	13.9	18	25.0	5	6.9
Level of scholarship	32	44.4	10	13.9	24	33.3	6	8.3
Extra-curricular participation	43	59.7	15	20.8	9	12.5	5	6.9
Extent of community activity	27	37.5	23	31.9	17	23.6	5	6.9
Extent of social activities	34	47.2	19	26.4	13	18.0	6	8.3
Percent employed	30	41.6	25	34.7	9	12.5	8	11.1
STUDENT TRAITS								
Their behavior, manners	36	50.0	4	5.5	26	36.1	6	8.3
Their loyalty, school pride	43	59.7	9	12.5	14	19.4	6	8.3
Their cooperation	44	61.1	8	11.1	15	20.8	5	6.9
Their appearance, neatness of dress	50	69.4	8	11.1	8	11.1	6	8.3
Their friendliness	59	81.9	5	6.9	3	4.2	5	6.9

TABLE I (Continued)

Situation Items	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
	raw	%	raw	%	raw	%	raw	%
STUDENT ATTITUDES								
Those toward fellow students	47	65.3	10	13.9	9	12.5	6	8.3
Those toward learning	32	44.4	8	11.1	26	36.1	6	8.3
Those toward faculty	42	58.3	10	13.9	15	20.8	5	6.9
Those toward rival schools	39	54.2	19	26.4	8	11.1	6	8.3
STUDENT CONTRIBUTIONS								
Percent going to college	19	26.4	22	30.6	21	29.2	10	13.9
Percent in National Student Assoc.	4	5.5	43	59.7	11	15.3	14	19.4
Number interscholastic champions	7	9.7	45	62.5	9	12.5	11	15.3
SECTION IX: THE PARTICULAR POSITION								
YOUR TEACHING LOAD								
Diversity of subjects	45	62.5	15	20.8	9	12.5	3	4.2
Appropriateness to your training	49	68.0	9	12.5	11	15.3	3	4.2
Number of classes	50	69.4	9	12.5	10	13.9	3	4.2
Size of classes	41	56.9	9	12.5	19	26.4	3	4.2
YOUR EXTRA-CURRICULAR LOAD								
Number of activities	45	62.5	11	15.3	10	13.9	6	8.3
Appropriateness to your training	39	54.2	17	23.6	9	12.5	7	9.7
Number of participants	42	58.3	20	27.8	4	5.5	6	8.3
Amount of time spent	32	44.4	18	25.0	16	22.2	6	8.3
Time scheduled for meeting	26	36.1	23	31.9	17	23.6	6	8.3
YOUR ADMINISTRATIVE LOAD								
Amount of home room responsibility	37	51.4	21	29.2	10	13.9	4	5.5
Number noon, after school duties	39	54.2	22	30.6	8	11.1	3	4.2
Execution of building regulations	37	51.4	28	38.9	4	5.5	3	4.2
Number of records and reports	42	58.3	18	25.0	10	13.9	2	2.8
Times lesson plans are required	44	61.1	20	27.8	5	6.9	3	4.2
Degree of independence allowed	61	84.7	5	6.9	3	4.2	3	4.2
YOUR INSTRUCTIONAL MATERIALS								
Condition of textbooks	42	58.3	12	16.6	13	18.0	5	6.9
Adequacy of text materials	36	50.0	12	16.6	18	25.0	6	8.3
Appropriateness of other aids	40	55.5	15	20.8	12	16.6	5	6.9
Regulation for all materials	39	54.2	20	27.8	6	8.3	7	9.7
Adequacy of department budget	38	52.8	17	23.6	12	16.6	5	6.9
YOUR COMMUNITY DUTIES								
Their nature	23	31.9	39	54.2	2	2.8	8	11.1
Their frequency and time needed	22	30.6	38	52.8	3	4.2	9	12.5
Their rewards	18	25.0	42	58.3	3	4.2	9	12.5
YOUR SALARY								
The amount	53	73.6	7	9.7	12	16.6	0	0
Frequency of payment	57	79.2	7	9.7	8	11.1	0	0
Bases for determining	40	55.5	19	26.4	6	8.3	7	9.7
Amount of deductions	43	59.7	18	25.0	6	8.3	5	6.9

TABLE I (Continued)

Situation Items	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
	raw	%	raw	%	raw	%	raw	%
YOUR CONTRACT PROVISIONS								
Their exact nature	44	61.1	18	25.0	7	9.7	3	4.2
Their justness	43	59.7	24	33.3	2	2.8	3	4.2
YOUR PROMOTION								
The form it would take, its nature	27	37.5	23	31.9	11	15.3	11	15.3
Basis for granting	28	38.9	21	29.2	11	15.3	12	16.6
Amount of salary increments	34	47.2	19	26.4	11	15.3	8	11.1
FURTHER REQUIREMENTS								
Teaching method desired	37	51.4	19	26.4	4	5.5	12	16.6
Student relations desired	33	45.8	20	27.8	7	9.7	12	16.6
Type of discipline wanted	31	43.0	15	20.8	15	20.8	11	15.3
Committee work involved	27	37.5	28	38.9	5	6.9	12	16.6

2a. With what situational factors were these teachers dissatisfied?

The Inventory instructions asked teachers to indicate such factors by responding -2 or -1. Thus the total number of negative or unsatisfied responses to each situational factor was computed. Twelve of the 316 factors in the Inventory each received a higher number of negative responses of either satisfaction or neutrality. Again, Table I shows raw scores and percentages of all unsatisfactory responses; Table Ia identifies those factors for which 75, 50, and 25 percent of the teachers gave responses of unsatisfaction or dissatisfaction.

There were no situational factors for which over 75 percent of the teachers in this study felt dissatisfied; there were none toward which three out of four teachers had difficulty adjusting. However, four factors of the 316 received responses of dissatisfaction from over 50 percent of the teachers:

1. Stage and concert offerings in the community
2. Museums, galleries, zoos in the community
3. Public forums and lectures in the community
4. The number of faculty rooms in the school plant

This absence of factors toward which half or more of the teachers were dissatisfied leads one to the conclusion that teachers either adjust well, conditions are not inadequate or unusual in the communities, or that the inexperience of the teachers in this study and the short time each had to get acquainted with the situation before reacting to the Inventory, gave a degree of inaccuracy to their responses.

Over 25 percent of the respondents reacted with dissatisfaction to 53 of the factors of the Inventory but these same factors received many satisfactory and neutral responses and probably represent those aspects of the situation toward which there are different degrees of adjustment required. Table I and Table Ia will identify for the reader specific situational factors toward which varying degrees of dissatisfaction are expressed.

2b. With what situational factors were these teachers unconcerned?

The Inventory instructions asked teachers to indicate such factors by marking 0. Thus, the total number of neutral responses to each situational factor was ascertained. Fifty-one of the 316 factors of the Inventory each received a higher number of neutral responses than they did responses of either satisfaction or dissatisfaction. Table I also shows raw scores and percentages of all neutral responses. Table Ia identified these situational factors for which 75 percent of the teachers felt no concern, those for which over 50 percent responded neutrally, and those for which over 25 percent gave such responses.

There were no situational factors for which over 75 percent of the teachers in this group were unconcerned; there were none which, to this degree, entered into their liking or disliking their placement. However, over 50 percent of the teachers gave neutral responses to the following twenty-one factors:

1. Degree of activity of fraternal orders in the community
2. Appropriateness of fraternal orders to you
3. Attitude of fraternal orders toward teachers
4. Laurels and prestige earned by the community
5. Types of extra employment available
6. Probable wage levels of extra employment
7. Openings for summer employment
8. Cost of community services to citizens
9. The majority race of people
10. The predominate nationality
11. The minority nationalities
12. Major religious affiliations of the people
13. Customs of unusual dress of the people
14. The number of Union memberships on faculty
15. The number of earned recognitions by the faculty
16. Number of faculty having articles published
17. Percent students in National Student Association
18. Number interscholastic champions among students
19. The nature of community duties of the teacher
20. The frequency and time needed in community work
21. The rewards connected with community duties

Thus, some situational factors do not concern over half of the teachers in this study and probably represent those factors for which little concern should be felt by placement officials as well as the applicants.

Over 25 percent of the teachers gave neutral responses to 120 factors but these same items received many satisfactory and unsatisfactory responses and probably represent those factors toward which some degree of adjustment is required of the teacher. Table I and Table Ia will identify for the reader specific factors for which varying degrees of unconcern was felt, and point out those which do not enter into these teachers liking or disliking their position.

3. What situational factors seem critical to placement satisfaction?

From an analysis of the responses made on the Situation Inventory, certain factors can be identified as more "critical" to the teachers in this study. Critical factors might be defined as those receiving a large percent of unsatisfactory responses as well as those toward which responses were divided or relatively balanced between satisfaction, neutrality, and dissatisfaction. Likewise, uncritical factors might include those for which a large percent of satisfactory responses were reported as well as those for which a large percent of neutral responses were obtained. The term 'critical' is not to be interpreted as attempting to identify items important to placement of teachers in general. Of the 316 items of the Inventory used in this study, some caused more concern than did others to these 72 teachers. If these same teachers were to be placed again in the same situation, prior knowledge of these 'critical' items may have acted to increase their satisfaction with the situation, or have prevented their acceptance of the position. The term is used to emphasize that certain situational factors are critical in every situation.

The length of any such critical list would be dependent upon the degree, or level, of response in the various categories one might accept. If one were to accept the 75 percent level, only 24 factors might be eliminated from the Inventory as uncritical (24 Satisfaction; 0 Neutral; see above). Should one adopt the 50 percent level, and this discussion will accept this level, 175 factors toward which these teachers felt that degree of satisfaction, plus 21 toward which these teachers felt that degree of neutrality might be eliminated as uncritical. The remaining 120 situational factors might be termed critical to a degree.

Addtional uncritical factors might include those with reference to the principal and those with reference to the supervisor. In the majority of schools these functions were assumed by the superintendent and, as asked in the Inventory, separate responses were omitted in such cases. The total number of teachers responding to these factors did not exceed 34 in the case of the principal and 9 in the case of the supervisor. Satisfaction was the outstanding response even then, so one can safely classify those ten factors as uncritical.

Further elimination can be made of those factors whose combined percentage of satisfaction and neutral responses exceed some arbitrary total. Each factor whose percentage of satisfactory responses exceeded fifty has already been termed uncritical as has those whose percentage of neutrality responses exceeded fifty. However, should the reactions of teachers to a specific factor be distributed mainly between satisfaction and neutral responses without either exceeding fifty percent, it should be reasonable to classify that factor as uncritical. Using 80 percent as an arbitrary standard, then, ten more factors were eliminated when it was found that the combined total of Satisfaction and Neutral responses exceeded that amount.

Thus the 100 most critical situational factors for this group of teachers were identified. Those factors are starred (*) in Table Ia and Table III. These constitute those factors of the teaching situation which might be included in School-Community credentials and which should be shown more consideration by placement officials and applicants prior to placement.

The 100 most critical situational factors for this group were:

1. Convenience of bus schedules
2. Convenience of train schedules
3. Nearness to friends and relatives
4. Extent of new, modern buildings in community
5. Evidence of planning, orderliness in community
6. The type of industries found there
7. The contribution of industries to progress
8. Adequacy of public library materials
9. Recency of public library materials and books
10. Availability of social groups and community clubs to teachers
11. Prices of clothing in the community
12. Stage and concert offerings in the community
13. Museums, galleries, zoos in the community
14. Public forums and lectures in the community
15. Commercial amusements available in the community
16. Property valuation in the community
17. Community tax rate for school purposes
18. Indebtedness of the community
19. The diversity of public utilities
20. The adequacy of service from public utilities
21. Amount of foreign language spoken by the people
22. The quality of everyday usuage of language
23. The types of occupations followed by the people
24. The degree of diversity in occupations
25. The average family income
26. The range of incomes of the people
27. The people's general educational level
28. The people's major political beliefs
29. The people's interests in the arts
30. The people's social graces and manners
31. Oddities of speech and expression among the people
32. The ease of arrangement of classrooms within
33. The freedom of classrooms from disturbances
34. The number of faculty rooms
35. The degree of privacy afforded in faculty rooms

TABLE Ia

SUMMARY OF RESPONSES TO THE ITEMS IN THE SITUATION INVENTORY

	S Satis-factory Items**	N Neutral Items	U Unsatis-factory Items	Over 25% gave responses of S	N	U	Over 50% gave responses of S	N	U	Over 75% gave responses of S	N	U
SECTION I: THE COMMUNITY												
LOCATION												
The state it is in	x			x			x			x		
The section of state it is in	x			x			x			x		
The distance from home in miles	x			x		x	x					
SIZE												
The population	x			x			x					
The area, spread	x			x	x							
ACCESSIBILITY												
Adequacy, condition of highways	x			x			x			x		
*Convenience of bus schedules	x			x		x						
*Convenience of train schedules			x	x		x						
ADJACENCY												
Nearness to shopping centers	x			x			x					
*Nearness to friends and relatives	X			x		x						
To other centers of interest	x			x			x					
GEORGRAPHY												
Its range in temperature	x			x	x		x					
Its degree of humidity	x			x	x		x					
Its topography	x			x	x		x					
APPEARANCE												
Its cleanliness	x			x			x					
*Extent of new, modern buildings	x			x	x	x						
*Evidence of planning, orderliness	x			x	x	x						
INDUSTRIES												
*The type found there	x			x	x							
*Their contribution to progress		x		x	x							
INSTITUTIONS												
Diversity of churches	x			x			x			x		
Activity of churches	x			x	x		x					
Availability of your denomination	x			x			x					
Schools other than public		x		x	x							

**An item was deemed satisfactory if the percentage of responses exceeded each of the other two choices.
*Critical Situational Factors, see text, page 130

TABLE Ia (Continued)

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
HEALTH SERVICES												
Availability of good doctors	x			x			x					
Availability of good dentists	x			x			x					
Convenience of hospitals	x			x		x						
PUBLIC LIBRARY												
Convenience of opening hours	x			x		x	x					
*Its adequacy of materials	x			x		x						
*Its recency in materials and books	x			x								
FRATERNAL ORDERS												
Their degree of activity		x		x	x			x				
Appropriateness to you		x			x			x				
Attitude toward teachers		x		x	x			x				
SOCIAL GROUPS, COMMUNITY CLUBS												
Their diversity		x		x	x							
Purposes for organization		x		x	x							
*Availability to teachers	x			x	x							
Contribution to community	x			x	x							
LIVING QUARTERS IN COMMUNITY												
Type you found available	x			x			x			x		
Suitability of location	x			x			x			x		
Modernness of its conveniences	x			x			x			x		
Restrictions, regulations asked	x			x			x			x		
Degree of privacy provided	x			x			x			x		
MEAL ACCOMMODATIONS												
Type you found available	x			x			x					
Quality of the food	x			x			x					
Convenience of location	x			x			x					
LIVING COSTS IN THE COMMUNITY												
Rentals you must pay	x			x			x					
Prices paid for meals, groceries	x			x		x	x					
*Prices of clothing	x			x	x							
Prices of sundries	x			x	x							

TABLE Ia (Continued)

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
DISTINCTIONS OF THE COMMUNITY												
Notable characteristics		x		x	x							
Recognition by outside world		x		x	x							
Laurels and prestige it has earned		x			x			x				
CULTURAL OPPORTUNITIES IN COMMUNITY												
*Its stage and concert offerings			x	x		x			x			
*Its museums, galleries zoos			x			x			x			
*Its public forums and lectures			x			x			x			
Its provisions for adult education	x			x		x	x					
LEISURE TIME OPPORTUNITIES												
*Commercial amusements available	x		x	x		x						
Types of recreation available	x			x		x	x					
EXTRA JOB OPPORTUNITIES												
Types of extra employment available		x			x			x				
Probable wage levels		x			x			x				
Openings for summer employment		x			x			x				
FINANCIAL STATUS OF COMMUNITY												
*Its property valuation	x			x	x							
*Its tax rate for school purposes		x		x	x							
*Its indebtedness		x		x	x							
COMMUNITY DEMANDS ON TEACHERS												
Community responsibilities	x			x	x		x					
Social taboos, bans on behavior	x			x			x					
Expectancies of residence	x			x	x		x					
COMMUNITY SERVICES												
*The diversity of utilities		x		x	x							
*The adequacy of service		x		x	x							
The cost to citizens		x		x	x			x				
SECTION II: PEOPLE OF THE COMMUNITY												
STOCK OF THE PEOPLE												
Majority race		x		x	x			x				
Predominate nationality		x		x	x			x				
Minority nationalities		x		x	x			x				

TABLE Ia (Continued)

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
LANGUAGE OF THE PEOPLE												
*Amount foreign language spoken		x		x	x							
*Quality of everyday usage			x		x	x						
OCCUPATIONS OF THE PEOPLE												
*Types followed		x		x	x							
*Degree of diversity	x			x	x							
PEOPLE'S ECONOMIC STATUS												
*Average family income	x			x								
*Range of incomes	x			x	x							
PEOPLE'S CULTURE												
*Their general educational level	x			x		x						
*Their major political beliefs		x		x	x							
Their major religious affiliations		x		x	x			x				
*Their interests in the arts			x		x	x						
*Their social graces, manners	x			x	x	x						
PEOPLE'S COLLOQUIALISMS												
Behavior characteristics		x		x	x			x				
Customs of unusual dress		x			x							
*Oddities of speech and expression		x			x							
CHARACTERISTICS OF THE PEOPLE												
Hospitality	x			x			x					
Friendliness	x			x			x			x		
Cooperation with school	x			x		x	x					
SECTION III: SCHOOL PLANT												
SITE OF SCHOOL PLANT												
Convenience of location	x			x			x			x		
Adequacy of playground	x			x			x					
Freedom from hazards	x			x		x	x					
Appearance of grounds	x			x			x			x		
SCHOOL BUILDING												
Type of construction	x			x			x					
Degree of modernness	x			x		x	x					
Adequacy of exits	x			x			x					
Provision for ventilation	x			x			x					
Provision for safety	x			x			x					

TABLE Ia (Continued)

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
HEATING OF BUILDING												
Type in use	x			x			x					
Adequacy of performance	x			x			x					
LIGHTING IN THE BUILDING												
Type in use	x			x			x					
Adequacy of performance	x			x		x	x					
Convenience for use	x			x			x					
ROOMS IN BUILDING												
Adequacy of size	x			x		x	x					
Appropriateness of decoration	x			x		x	x					
Convenience of arrangement, plan	x			x			x					
*Ease for arrangement within	x			x		x						
*Freedom from disturbance	x			x		x						
TOILETS IN THE BUILDING												
Their adequacy	x			x			x					
Their condition	x			x			x					
FLOORS OF BUILDING												
Material used	x			x			x					
Their condition	x			x			x					
FURNITURE IN THE BUILDING												
Adequacy, amount	x			x			x					
Condition	x			x		x	x					
Utility, usefulness in school	x			x			x					
FACULTY ROOMS												
*Number of them			x	x		x			x			
*Degree of privacy offered			x	x		x						
*Regulations for their use			x	x	x	x						
CUSTODIAL SERVICE												
Adequacy	x			x			x					
Competency	x			x			x					
Cooperativeness with faculty	x			x			x			x		
SECTION IV: THE ADMINISTRATION												
BOARD OF EDUCATION												
General educational level	x			x			x					
Standing in the community	x			x			x					
*Its susceptibility to pressure		x		x	x							
*Its educational philosophy	x			x	x							
*Its rules and regulations	x			x	x							

TABLE Ia (Continued)

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
ACCREDITATION OF SCHOOL												
*The professional body approving	x			x	x							
*Value of such approval	x			x	x							
THE SUPERINTENDENT												
His age	x			x			x			x		
His years in present position	x			x			x					
His years training and degrees	x			x			x					
His kind and amount of experience	x			x			x					
His educational philosophy	x			x			x			x		
His practices	x			x			x					
PRINCIPAL (Omitted if same as Supt.)												
His age	x			x								
His years in present position	x			x								
His years training and degrees	x			x								
His years of like experience	x			x								
His educational philosophy	x			x								
His practices	x			x								
SUPERVISOR (Omitted if same as above)												
Years in present position	x											
Years in training, like experience	x											
Educational philosophy	x											
Practices, helpfulness	x											
ADMINISTRATIVE POLICIES												
Standards for student promotion	x			x			x					
Standards for student elgibility	x			x			x					
Teacher experimentation, research	x			x			x					
*Teacher tenure, seniority rights	x			x	x							
Use of democratic procedures	x			x			x					
SECTION V: SCHOOL ORGANIZATION												
SCHOOL YEAR												
Length in weeks	x			x			x					
Time of opening in fall	x			x			x					
Vacations allowed	x			x			x			x		
Time of closing in spring	x			x			x					

TABLE Ia (Continued)

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
DAILY SESSIONS												
Hour of opening	x			x			x					
Length of periods	x			x			x					
Length of noon hours	x			x			x			x		
Hour of closing	x			x			x					
SCHOOL GRADING SYSTEM												
Type used	x			x			x					
Rigidity of use	x			x			x					
Importance it holds with pupils	x			x		x	x					
SCHOOL CURRICULUM												
Broadness of offerings	x			x			x					
Adequacy for student needs	x			x			x					
Requirements and electives	x			x			x					
SCHOOL EXTRA-CURRICULUM												
Diversity, variety of offerings	x			x			x					
Adequacy for student needs	x			x			x					
Balance among activities	x			x			x					
STUDENT GROUPING IN SCHOOL												
*The bases used to group	x			x	x							
*Purpose for doing it	x			x	x							
STUDENT CONTROL												
Type used in whole school	x			x			x					
*Responsibility for maintaining	x			x								
*Nature of regulations imposed	x			x								
SCHOOL ASSEMBLIES												
Their frequency	x			x		x	x					
Their purpose	x			x			x					
Value to students	x			x			x					
*Responsibility for organizing	x			x								
SCHOOL GUIDANCE OF SCHOO												
SCHOOL GUIDANCE OF STUDENTS												
*Type and amount provided	x			x		x						
*Person or persons responsible	x			x		x						
*Aids available to teachers			x	x		x						

TABLE Ia (Continued)

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
PUPIL SERVICES												
Health provisions, examinations	x			x		x	x					
Provisions for nutrition, lunches	x			x		x	x					
*Employment aids	x			x	x							
TEACHERS MEETINGS												
Frequency	x			x			x					
Purpose	x			x			x					
Procedure	x			x			x					
Time of meeting	x			x			x					
Value to participants	x			x		x	x					
PUBLIC PROGRAMS BY SCHOOL												
Frequency	x			x	x		x					
*Faculty responsibility for staging	x			x	x							
SECTION VI: INSTRUCTIONAL MATERIALS												
SCHOOL LIBRARY												
Size, number of references	x			x		x	x					
*Adequacy for all areas	x			x		x						
*Recency of books and materials	x			x		x						
Variety and range of difficulty	x			x			x					
Suitability of periodicals	x			x			x					
AUDIO-VISUAL MATERIALS												
Appropriateness	x			x			x					
Condition, ease of operation	x			x			x					
Regulations for use	x			x			x					
Budget for materials	x			x			x					
TEXT MATERIALS												
Their ownership	x			x			x					
Appropriateness	x			x			x					
Condition, age	x			x			x					
CLASSROOM AIDS, LABORATORY												
*Adequacy	x			x								
*Condition	x			x								
*Appropriateness, utility	x			x								
STANDARDIZED TEST MATERIALS												
*Extent of use	x			x	x							
*Purposes for administration	x			x	x							
*Regulations for use		x		x	x							
SUPPLEMENTARY MATERIALS												
*Provision for class transportation	x			x	x							

TABLE 1a (Continued)

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
*Provision for outside talent	x			x	x							
*For student extension courses		x			x							
*For indices of free material		x			x							
SECTION VII: THE FACULTY												
STRUCTURE OF THE FACULTY												
Total number of individuals	x			x			x					
Average age	x			x			x					
Age range	x			x			x					
Sex distribution	x			x			x					
*Marital status	x			x								
TRAINING OF FACULTY												
Average length in years	x			x	x		x					
Percent having degrees	x			x			x					
Appropriateness to position	x			x			x					
Source, where taken	x			x	x		x					
Recency of last attendance	x			x	x		x					
FACULTY TEACHING EXPERIENCE												
Average number of years	x			x	x		x					
*Amount of local tenure	x			x	x							
Range of experience in years	x			x	x		x					
RESIDENCE OF FACULTY												
Percent living out of town	x			x	x		x					
Percent living locally	x			x	x		x					
Percent of home teachers		x		x	x							
TENURE OF FACULTY												
*Average length in this school	x			x	x							
*Percent of annual turnover	x			x	x							
FACULTY PROFESSIONAL STATUS												
Number WEA, NEA memberships	x			x			x			x		
Number Union memberships		x			x			x				
Number having articles published		x			x			x				
Number of earned recognitions		x			x			x				
ASSISTANTS TO FACULTY												
*Number available		x			x	x						
*Type of help provided		x			x	x						

TABLE Ia (Continued)

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
*Competence of the help		x		x	x							
*Regulations for use		x			x							
SERVICES TO FACULTY												
Availability of group insurance	x			x			x					
Provisions for sick leave	x			x			x			x		
Rules on emergency leave	x			x			x					
*Adequacy of professional library	x			x		x						
SELECTION OF FACULTY												
Method used	x			x			x					
By whom it is done	x			x			x					
Bases for choice	x			x	x		x					
EVALUATION OF WORK OF FACULTY												
*Method of evaluation used		x		x	x							
*Purpose for it		x		x	x							
*Bases used in evaluating		x		x	x							
*Person doing it	x			x	x							
FACULTY ACTIVITIES												
Extent in community	x			x			x					
*Extent in social affairs	x			x	x							
*Extent of professional work	x	x		x	x							
*Extent in school policy making	x			x								
FACULTY CHARACTERISTICS												
Friendliness	x			x			x			x		
Helpfulness and cooperation	x			x			x			x		
Leadership	x			x			x					
Interests matching yours	x			x			x					
SECTION VIII: THE STUDENTS												
STUDENT ENROLLMENT												
Total number	x			x			x					
Majority sex	x			x	x		x					
*Teacher-pupil ratio	x			x		x						
*Class distribution by year	x			x	x							
STUDENT RESIDENCES												
*Distance from school	x		x	x		x						
*Condition of the homes	x			x	x							
STUDENT PERFORMANCE												
Persistency of attendance	x			x			x					
*Level of scholarship	x			x		x						
Extra-curricular participation	x			x			x					

TABLE Ia (Continued)

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
*Extent of community activity	x			x	x							
*Extent of social activities	x			x	x							
*Percent employed	x			x	x							
STUDENT TRAITS												
*Their behavior, manners	x			x		x						
Loyalty, school pride	x			x			x					
Cooperation	x			x			x					
Appearance, neatness of dress	x			x			x					
Friendliness	x			x			x			x		
STUDENT ATTITUDES												
Those toward fellow students	x			x			x					
*Those toward learning	x			x		x						
Those toward faculty	x			x			x					
Those toward rival schools	x			x	x		x					
STUDENT CONTRIBUTIONS												
*Percent going to college		x		x	x	x						
Percent in Nat'l Student Association		x			x			x				
Number interscholastic champions		x			x			x				
SECTION IX: THE PARTICULAR POSITION												
YOUR TEACHING LOAD												
Diversity of subjects	x			x			x					
Appropriateness to your training	x			x			x					
Number of classes	x			x			x					
Size of classes	x			x		x	x					
YOUR EXTRA-CURRICULAR LOAD												
Number of activities	x			x			x					
Appropriateness to your training	x			x			x					
Number of participants	x			x	x		x					
*Amount of time to be spent	x			x								
*Time scheduled for meetings	x			x	x							
YOUR ADMINISTRATIVE LOAD												
Amount of homeroom responsibility	x			x	x		x					
Number noon, after school duties	x			x	x		x					
Execution of building regulations	x			x	x		x					
Number of records and reports	x			x			x					
Times lesson plans are required	x			x	x		x					

TABLE Ia

	S	N	U	Over 25% were S	N	U	Over 50% were S	N	U	Over 75% were S	N	U
Degree of independence allowed	x			x			x			x		
YOUR INSTRUCTIONAL MATERIALS												
Condition of textbooks	x			x			x					
*Adequacy of text materials	x			x								
Appropriateness of other aids	x			x			x					
Regulations for all materials	x			x	x		x					
Adequacy of department budget	x			x			x					
YOUR COMMUNITY DUTIES												
Their nature		x		x	x			x				
Frequency and time needed		x		x	x			x				
Their rewards		x			x			x				
YOUR SALARY												
Amount	x			x			x					
Frequency of payment	x			x			x			x		
Bases for determining	x			x	x		x					
Amount of deductions	x			x			x					
YOUR CONTRACT PROVISIONS												
Exact nature	x			x			x					
Their justness	x			x	x		x					
YOUR PROMOTION												
*The form it would take its nature	x			x	x							
*Basis for granting	x			x	x							
*Amount of salary increments	x			x	x							
FURTHER REQUIREMENTS												
Teaching method desired	x			x	x		x					
*Student relations desired	x			x	x							
*Type of discipline wanted	x			x								
*Committee work involved		x		x	x							

36. The regulations for use of faculty rooms
37. Susceptibility of Board of Education to pressure
38. Educational philosophy of the Board of Education
39. Rules and regulations made by Board of Education
40. The professional body approving accreditation of school
41. The value of such accreditation approval
42. Teacher tenure, seniority rights
43. The bases used for student grouping in school
44. The purpose of student grouping in school
45. Responsibility for maintaining student control
46. The nature of student control regulations imposed.
47. The responsibility for organizing school assemblies
48. The type and amount of school guidance of students
49. The person or persons responsible for student guidance
50. The aids in student guidance available to teachers
51. Employment aids to students
52. Faculty responsibility for staging public programs by the school
53. Adequacy of school library for all areas
54. Recency of books and materials in school library
55. Adequacy of classroom aids, laboratory
56. Condition of classroom aids, laboratory
57. Appropriateness and utility of classroom aids, laboratory
58. The extent of use of standardized test materials
59. The purposes for administration of standardized test materials
60. The regulations for use of standardized test materials
61. Provision for class transportation to supplementary learning aids
62. Provision for outside talent as supplementary learning aids
63. Provision for student extension courses
64. Provision for indices of free supplementary materials
65. Marital status of faculty
66. The amount of local tenure of faculty
67. Average length of faculty tenure in this school
68. The percent of annual faculty turnover
69. The number of assistants available to faculty
70. The type of assistance provided for faculty
71. The competence of assistants to faculty
72. The regulations for use of faculty assistants
73. Adequacy of professional library
74. The method of evaluation of faculty's work
75. The purpose of evaluation of faculty's work
76. The bases used in evaluation of work of faculty
77. The person making the evaluation of faculty work
78. The extent of faculty activity in social affairs
79. The extent of faculty activity in professional work
80. The extent of faculty activity in school policy making
81. The teacher-pupil ratio
82. The class distribution by year
83. The distances of student residences from school
84. The condition of students' homes
85. The level of student scholarship
86. The extent of student activity in the community
87. The extent of student social activities
88. The percent of students employed
89. Student behavior, manners
90. Student attitudes toward learning
91. Percent of students going to college
92. Amount of time to be spent on extra-curricular work
93. The time scheduled for teachers meetings
94. The adequacy of text materials
95. The form and nature of your promotion
96. The basis for granting promotion
97. The amount of salary increments
98. The student relations desired
99. The type of discipline wanted
100. The committee work involved

4. What teacher backgrounds seem related to placement satisfaction and to critical situational factors?

Analysis of this problem directed treatment of the data toward five sub-problems:

a. What groups seem to be more satisfied with their teaching situation?
b. What groups seem to be more dissatisfied with their teaching situation?
c. What groups seem more unconcerned toward the factors of their teaching situation?
d. What groups are extreme in their responses?
e. What situational factors were critical for each extreme group?

4a. What groups seem to be more satisfied with their teaching situation?

Groupings were arbitrarily made on the basis of the background data furnished with the Inventory. Table II shows these groups. The Satisfaction Scores of the individual teachers of each group were totaled as were the Neutral and Unsatisfaction Scores. Raw totals were then converted to percentages of each group total both of

which are shown in Table II. Omissions were also considered to serve as a measure of insuring greater accuracy.

The total group of 72 teachers were more satisfied than neutral or unsatisfied. This has been shown above in comparison of median Satisfaction, Neutral, and Unsatisfaction Scores. The statement can also be supported by the fact that 52.3 percent of the total responses of the entire group were responses of satisfaction, 23.3 percent were neutral responses, and 16.2 percent were responses of unsatisfaction. Eight and two-tenths percent were omitted. These data add to the conclusion made above that placement officials are achieving some success in placement of teachers if satisfaction can be accepted as a valid criterion of placement success. The conclusion of other researchers that first year teachers are more satisfied and less critical of their situation is also substantiated.

Groupings within each background classification varied in the percentage of total responses (see Table II). In the age classification of the teachers in this study, the 25-26 year age group was the most satisfied of all four age groups. The 23-24 year age group was the most neutral and also the most dissatisfied of all age groups.

Men were more satisfied and also more unconcerned than women; women, however, were slightly more dissatisfied. In the classification of Major Preparation the Mathematics-Science group was the most satisfied, the Miscellaneous Preparation group (Agriculture, Art, Commerce) was the most neutral, and the Home Economics group was the most dissatisfied. In Minor Preparation, the Miscellaneous group (Art, Child Development, Commerce, Mathematics) was the most satisfied, the Language group was the most unconcerned, and the Science group was the most dissatisfied.

Teachers having four or more siblings were the most satisfied as was the group which had intermediate sibling rank. Only children were the most neutral as were those having youngest sibling rank. Teachers with two or three siblings and those having intermediate sibling rank were the most dissatisfied.

Other groups which were the most satisfied in their respective classifiecations included those having no younger brothers, those having one or more older brothers, those having no younger sisters, and those having no older sisters. In these same classifications the most neutral groups included those having one or more younger brothers, those having no older brothers, those having one or more younger sisters, and those having no older sister. Differences were slight, however, in the last two groupings. The most dissatisfied groups in these same classifications included those having no younger brothers, those having one or more older brothers, those having no younger sisters, and those having one or more older sisters.

On the basis of residence the most satisfied groups were those who had lived with parents twenty years or more, had no years of independence from parents, lived mainly in a rural (farm to 500 population) community, lived only in one population classification, and had moved one, two, or three times. The most neutral groups within these same classifications included those who had lived with parents twenty years or more, had lived one or more years independently of parents, lived mainly in a city of over 100,000 population, had lived in two or more population classifications, and had moved four times or more. The most dissatisfied groups were those who had lived with parents less than twenty years, had been independent of parents one or more years, lived in a rural community in two or more population classifications, and had moved four or more times.

Teachers whose mothers had had all or some college education were the most satisfied as were those whose fathers had had all or some secondary schooling. The most neutral groups were those whose mothers had had all or some high school and those whose fathers had all or some of an elementary education. The most unsatisfied groups were those whose mothers had only grade school education and those whose fathers had some or all of a high school education.

Teachers whose mothers had never been gainfully employed outside the home were the most satisfied as well as the most unsatisfied, while those whose mother had worked for one year or more outside the home were most neutral. Teachers whose parents had been married 26 to 30 years were the most satisfied, those whose parents had been married less than 25 years were the most neutral, and those whose parents had been married 31 years or over were the most unsatisfied.

Teachers who came from families whose income was over $5000 were the most satisfied with their situation, those who came from families having an income between $2500 and $5000 were the most neutral, and those whose family income was less than $2500 were more dissatisfied with their position.

Those teachers who had attended two or more different elementary schools and those who had attended two or more different colleges were two groups which were the most satisfied. Those who had attended only one elementary school and one college were the most neutral as well as the most dissatisfied.

Some degree of self-support in high school and over half support in college accounted for two most satisfied groups. The most neutral were those who had no self-support in high school and over half in college, while the most dissatisfied in this

TABLE II

RESPONSES OF VARIOUS GROUPS TO THE SITUATION INVENTORY EXPRESSED IN TOTALS AND PERCENTAGES OF ENTIRE GROUP

Groups	Cases	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
		raw	%	raw	%	raw	%	raw	%
TOTAL GROUP	72	11893	52.3	5296	23.3	3681	16.2	1882	8.2
AGE									
21-22 year age group	31	5299	54.1*	2131	21.8	1401	14.3	965	9.8
23-24 year age group	14	1688	38.2	1261	28.5	1030	23.3	445	10.0
25-26 year age group	10	1949	61.7	669	21.1	365	11.6	177	5.6
27 years and over	17	2957	55.0	1235	23.0	885	16.5	295	5.5
SEX									
Male	31	5263	53.7	2428	24.8	1572	16.0	533	5.5
Female	41	6630	51.2	2868	22.1	2109	16.3	1349	10.4
MAJOR PREPARATION									
Home Economics	10	1435	45.4	783	24.8	639	20.2	303	9.6
Language Arts	16	2979	58.9	916	18.1	809	16.0	352	7.0
Mathematics and Science	12	2307	60.8	689	18.2	599	15.8	197	5.2
Social Science	13	2192	53.4	940	22.9	724	17.6	252	6.1
Physical Education	6	836	44.1	463	24.4	277	14.6	320	16.9
Others (Agr., Comm., Art)	15	2144	45.2	1505	31.8	633	13.4	458	9.6
MINOR PREPARATION									
Languages	18	2962	52.1	1450	25.5	887	15.6	389	6.8
Science	22	3329	47.9	1671	24.0	1304	18.8	648	9.3
Social Science	17	2807	52.3	1308	24.3	847	15.8	410	7.6
Others (Fine Arts, Math.)	15	2795	58.9	867	18.3	643	13.6	435	9.2
TOTAL SIBLINGS									
None	6	1003	52.9	580	30.6	175	9.2	138	7.3
One only	22	3585	51.6	1542	22.2	968	13.9	857	12.3
Two and three	23	3611	49.7	1739	23.9	1413	19.4	505	6.9
Four or more	21	3694	55.7	1435	21.6	1125	17.0	382	5.7
SIBLING RANK									
Youngest	20	3260	51.6	1655	26.2	1015	16.1	390	6.2
Intermediate	21	3527	53.1	1309	19.7	1426	21.5	374	5.6
Oldest	25	4103	51.9	1752	22.2	1065	13.5	980	12.4
BROTHERS YOUNGER									
None	40	6746	53.4	2853	22.6	2048	16.2	993	7.8
One or more	32	5147	50.9	2443	24.2	1633	16.1	889	8.8
BROTHERS OLDER									
None	40	6402	50.6	3184	25.2	1793	14.2	1261	10.0
One or more	32	5491	54.3	2112	20.9	1888	18.7	621	6.1

*54.1% of the total responses of the 21-22 year age group were responses of satisfaction; 21.8% were responses of neutrality; 14.3% were responses of unsatisfaction. They omitted 9.8%. Total 100%.

TABLE II (Continued)

Groups	Cases	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
		raw	%	raw	%	raw	%	raw	%
SISTERS YOUNGER									
None	43	7176	52.8	3119	23.0	2246	16.5	1047	7.7
One or more	29	4717	51.5	2177	23.8	1435	15.7	835	9.1
SISTERS OLDER									
None	42	7033	53.0	3145	23.7	1797	13.5	1297	9.8
One or more	30	4860	51.3	2151	22.7	1884	19.9	585	6.1
RESIDENCE, WITH PARENTS									
1 - 19 years, incl.	32	4948	48.9	2129	21.1	1980	19.6	1055	10.4
20 years or more	40	6945	54.9	3167	25.1	1701	13.5	827	6.5
RESIDENCE, INDEPENDENT OF PARENTS									
None (No years)	33	5527	53.0	2380	22.8	1568	15.0	953	9.1
1 year or more	38	6293	52.4	2777	23.1	2093	17.4	845	7.1
RESIDENCE, MAJOR COMMUNITY TYPE									
Rural (farm to 500)	20	3457	54.7	1323	20.9	1177	18.6	363	5.7
500 - 10,000	14	2045	46.2	1085	24.5	793	17.9	501	11.3
10,000 - 100,000	28	4731	53.5	2016	22.8	1353	15.3	748	8.4
Over 100,000	10	1660	52.5	872	27.6	358	11.3	270	8.5
RESIDENCE, NUMBER TYPES ABOVE									
One only	37	6527	55.8	2558	21.9	1793	15.3	814	7.0
Two or more	35	5366	48.5	2738	24.8	1888	17.1	1068	9.6
RESIDENCE, TIMES FAMILY MOVED									
None	31	5198	53.1	2183	22.3	1758	17.9	657	6.7
1 - 3 times	30	5049	53.3	2215	23.4	1188	12.5	1028	10.6
4 times or more	11	1646	47.4	898	25.8	735	21.1	197	5.7
EDUCATION OF MOTHER									
Elementary (all or some)	31	4929	50.3	2411	24.6	1765	18.0	691	7.1
Secondary (all or some)	20	3321	52.5	1672	26.5	999	15.8	328	5.2
College (all or some)	21	3643	54.9	1213	18.3	917	13.8	863	13.0
EDUCATION OF FATHER									
Elementary only (all or some)	29	4648	50.7	2308	25.2	1527	16.7	681	7.4
Secondary (all or some)	20	3384	53.5	1480	23.8	1172	18.5	284	4.5
College (all or some)	23	3861	53.1	1508	20.8	982	13.5	917	12.6
MOTHER, YEARS GAINFULLY EMPLOYED									
None	23	4038	55.5	1574	21.7	1212	16.7	444	6.1
One or more	30	4883	51.5	2095	22.1	1322	13.9	1180	12.5

TABLE II (Continued)

Groups	Cases	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
		raw	%	raw	%	raw	%	raw	%
YEARS MARRIED, PARENTS									
1 - 25 years, incl.	23	3203	44.1	2121	29.2	960	13.2	984	13.5
26 - 30 years, incl.	26	4895	59.6	1486	18.1	1356	16.5	479	5.8
31 years and over	21	3595	54.1	1472	22.2	1198	18.1	371	5.8
FAMILY INCOME, PARENTS									
Less than $2500	8	1457	57.6	520	20.6	459	18.2	92	3.6
$2500 - $5000	23	3899	53.6	1568	21.6	1189	16.4	612	8.4
Over $5000	13	2574	62.7	479	11.7	662	16.1	393	9.5
ELEMENTARY SCHOOLS ATTENDED, TEACHER									
One only	43	6841	50.4	3227	23.7	2477	18.2	1043	7.7
Two or more	28	4778	54.0	2057	23.3	1180	13.3	833	8.4
COLLEGES ATTENDED, TEACHER									
One only	41	6439	49.7	3438	26.5	2244	17.3	835	6.5
Two or more	30	5180	54.6	1846	19.5	1413	14.9	1041	11.0
DEGREE OF SELF-SUPPORT (H. S.)									
Some (1 - 100%)	24	3972	52.4	1732	22.8	1325	17.5	555	7.3
None	47	7702	51.9	3546	23.9	2300	15.5	1304	8.7
DEGREE OF SELF-SUPPORT (COLLEGE)									
51% - 100%	33	5532	53.0	2471	23.7	1770	17.0	655	6.3
0% - 50% incl.	38	6202	51.7	2784	23.2	1804	15.0	1214	10.1
TRAVEL - DOMESTIC TRIPS (OVER 500 MILES)									
None	16	2446	48.4	1244	24.6	1112	22.0	254	5.0
1 - 3 trips, incl.	25	4284	54.2	1595	20.2	1036	13.1	985	12.5
4 trips or more	18	3124	54.9	1089	19.1	967	17.0	508	9.0
MARITAL STATUS									
Single	57	9540	53.0	4013	22.3	2844	15.8	1615	8.9
Married	14	2096	47.4	1271	28.7	794	17.9	263	6.0
JOBS HELD FOR PAY									
0 - 3, incl.	27	5101	59.8	1486	17.4	1191	14.0	754	8.8
4 - 5, incl.	29	4258	46.5	2566	28.0	1634	17.8	706	7.7
6 or more	16	2534	50.1	1244	24.6	856	16.9	422	8.4
DEPENDENTS, NUMBER									
None	62	10082	51.5	4729	24.1	3124	15.9	1657	8.5
One or more	10	1811	57.3	567	17.9	557	17.8	225	7.2

TABLE II (Continued)

Groups	Cases	Scores of Satisfaction		Scores of Neutrality		Scores of Unsatisfaction		Scores Omitted	
		raw	%	raw	%	raw	%	raw	%
CLUBS, TOTAL EVER JOINED									
0 - 2, incl.	21	3863	58.2	1659	25.0	799	12.1	315	4.7
3 - 7, incl.	20	3193	50.5	1571	24.9	1154	18.2	402	6.4
8 or more	18	2965	52.1	1088	19.1	1108	19.5	527	9.3
CLUBS, NOW BELONGING									
None	13	2511	61.1	987	24.0	484	11.8	126	3.1
1 - 2, incl.	32	5363	53.0	2205	21.8	1529	15.1	1015	10.1
3 or more	23	3519	48.4	1651	22.7	1465	20.2	633	8.7
VETERAN STATUS									
Veteran	30	5430	57.3	1972	20.8	1556	16.4	522	5.5
Non-veteran	42	6463	48.7	3324	25.0	2125	16.0	1360	10.3
YOUTH LEADERSHIP, MONTHS IN									
None	8	1160	45.9	792	31.3	457	18.1	119	4.7
1 - 10, incl.	22	3901	56.1	1701	24.5	931	13.4	419	6.0
11 - 25, Incl.	16 -	2439	48.2	1269	25.1	800	15.8	548	10.8
Over 25	24	4072	53.7	1443	19.0	1405	18.5	664	8.8
YOUTH LEADERSHIP, TYPES									
Tutoring	21	3511	52.9	1466	22.1	1068	16.1	591	8.9
Sunday school, YMCA, church	24	3942	52.0	1653	21.8	1254	16.5	735	9.7
Camp counselor, scouts, 4-H	31	5070	51.8	2263	23.1	1609	16.4	854	8.7
School offices	42	6691	50.4	2915	22.0	2372	17.9	1294	9.7
PLACEMENT, BY POPULATION									
1000 and under	14	2229	50.4	990	22.4	886	20.0	319	7.2
1001 - 2000	13	2120	51.6	1005	24.5	774	18.8	209	5.1
2001 - 5000	14	2114	47.8	1148	25.9	678	15.4	484	10.9
5001 - 15,000	15	2491	52.6	1062	22.4	856	18.1	331	6.9
Over 15,000	16	2939	58.1	1091	21.6	487	9.6	539	10.7
PLACEMENT AND RESIDENCE SIMILAR									
Lived under 4000, placed under 4000	16	2550	50.5	1108	21.9	1099	21.7	299	5.9
Lived over 4000, placed over 4000	21	3575	53.9	1712	25.8	832	12.5	517	7.8
PLACEMENT AND RESIDENCE DISSIMILAR									
Lived under 4000, placed over 4000	13	2302	56.0	841	20.5	552	13.4	413	10.1
Lived over 4000, placed under 4000	21	3331	50.2	1612	24.3	1127	17.0	566	8.5

classification were some degree of self-support in high school and over half in college.

The teachers who had made four or more trips of 500 miles or more away from home were more satisfied while those who had made no such trips were more neutral and most dissatisfied. Single teachers were more satisfied than married, but the married were more neutral and more dissatisfied.

Those who had held 0-3 jobs for pay were most satisfied while those who had held 4-5 jobs were more neutral and dissatisfied. Teachers with one or more dependents were both more satisfied and more dissatisfied than those with no dependents; the latter group was the most neutral. Those who were veterans, too, were both more satisfied and more dissatisfied than non-veterans; the latter group was the more neutral.

Teachers who had joined 0-2 clubs as well as those not now belonging to any had higher satisfaction scores and also higher neutral scores. However, the "joiners", the teachers who had joined eight or more in their experiences and now belonged to three or more, were the most dissatisfied.

Teachers who had spent 1-10 months in youth leadership were the most satisfied while those who had no such experience were the most neutral and those with over 25 months in youth leadership the most dissatisfied. Types of youth leadership found that those who did tutoring was the group expressing the most satisfaction; camp counseling was the group expressing the most neutrality, and school offices was the group expressing the most dissatisfaction.

As might be predicted, the group placed in communities of over 15,000 were the most satisfied and those placed in communities under 1000 the most dissatisfied. Those placed in communities between 2000 and 5000 were the most neutral. When placement is compared with major residence, the most satisfied groups were those who lived in places under 4000 most of their lives and were placed in towns over 4000. The most neutral groups were those who lived in towns over 4000 and were placed in situations over 4000, while the most dissatisfied groups were those who lived where it was under 4000 population and were placed in a like situation.

Using the most satisfied group within each classification then as a basis for description, the most satisfied teacher or the one easiest to place would be a man, twenty-five or twenty-six years of age, majoring in Science and minoring in Mathematics. He would have four or more siblings, but their sex and his sibling rank is inconsistent and therefore lacks description. He would have lived nineteen years or less with his parents, more or less dependent upon them in a rural community and would have moved not more than three times. His mother would have had all or some college education while his father would have had all or some of a high school education. His mother never would have had to work outside the home and his parents would have been married 26-30 years. The family income would have been over $5000 annually.

This hypothetical teacher would have attended two or more elementary schools as well as two or more colleges and would have enjoyed some degree of self-support during high school and college. He would have traveled considerably, would be single, but would have held not more than three jobs for pay. He would not be a "joiner" of clubs but would have veteran status and up to ten months experience in youth leadership of a tutoring type.

4b. What groups seem more dissatisfied with their teaching situation?

Analysis of Table II shows the following groups of their respective classifications more dissatisfied than the other groups in the same classification:

1. The 23-24 year age group
2. Females
3. Home Economics - major preparation
4. Sciences - minor preparation
5. Have 2-3 siblings
6. Intermediate sibling rank
7. No younger brothers or sisters
8. One or more older brothers and sisters
9. Lived with parents 1-19 years
10. Lived in rural community most of lifetime
11. Independent of parents one or more years
12. Moved four or more times
13. Lived in two or more population classifications
14. Mother only elementary education
15. Father a high school education
16. Non-working mother (outside home)
17. Parents married 31 years or more
18. Family income less than $2500
19. Attended only one elementary school and one college
20. Had some degree of self-support in high school and college
21. No travel over 500 miles from home
22. Married - one or more dependents
23. Held four or five jobs for pay
24. Joined eight or more clubs
25. Now belongs to three or more clubs
26. Veteran status
27. Over twenty-five months in youth leadership
28. Placed under 1000 population
29. Lived under 4000 and placed under 4000 population

4c. What groups seem more unconcerned toward the factors of their teaching situation?

Analysis of Table II, again, shows the following groups of their respective classifications more unconcerned toward the factors which comprised their teaching situation:

1. The 23-24 year age group
2. Males
3. Miscellaneous major preparation
4. Language minor preparation
5. No siblings
6. Youngest sibling rank
7. Lived with parents twenty years or more
8. Lived one year or more independently of parents
9. Lived in population classification 100,000 or over major part of lifetime
10. Lived in two or more population classifications
11. Moved four or more times
12. Mother only some or all high school education
13. Father only an elementary school education
14. Mother gainfully employed one or more years
15. Parents married 1-25 years
16. Family income between $2500 and $5000
17. Attended only one elementary school and one college
18. Dependent upon parents during high school
19. Dependent up to fifty percent on parents during college
20. No travel over 500 miles away from home
21. Married - no dependents
22. Held 4-5 jobs for pay
23. Joined 0-2 clubs, now belong to none
24. Non-veteran
25. No months experience in youth leadership
26. Placed in 2000-5000 population classification
27. Lived in over 4000 and placed in over 4000 population

These differences between groups within each classification were, in most cases, small and should apply only to the teachers in this study. If future research could establish significance of such background differences, the process of matching candidate preferences with situational factors could be facilitated and satisfaction toward placement increased.

4d. What groups were extreme in their responses?

Another approach was made in the analysis toward identifying important groups. Whereas the above comparisons of groups were done within each single background classification, further comparison can be made of all groups regardless of classification. Thus the percentages of all responses of all groups in each of the three categories—Satisfaction, Neutrality, Dissatisfaction—were ranked to find the extremely satisfied group, the extremely neutral group, the extremely dissatisfied group.

Group percentages of Satisfaction ranged from 38.2 percent ot 62.7 percent with the median 52.3 percent. The four most satisfied groups regardless of classification were:

1. Family income over $5000 - 62.7 percent satisfied
2. The 25-26 year age group - 61.7 percent satisfied
3. Belonging to no clubs now - 61.1 percent satisfied
4. Mathematics-Science major - 60.8 percent satisfied

Group percentages of dissatisfaction ranged from 9.2 percent to 23.3 percent with the median at 16.2 percent. The four most dissatisfied groups were:

1. The 23-24 year age group - 23.3 percent dissatisfied
2. No travel over 500 miles - 22.0 percent dissatisfied
3. Lived under under 4000; placed under 4000 - 21.7 percent dissatisfied
4. Intermediate sibling rank - 21.5 percent dissatisfied

Group percentages of neutrality ranged from 11.7 percent to 31.8 percent with the median at 23.3 percent. The four most neutral groups were:

1. Miscellaneous major - 31.8 percent neutral
2. No youth leadership - 31.3 percent neutral
3. No siblings - 30.6 percent neutral
4. Parents married 25 years or less-29.1 percent neutral

Such groups of teacher backgrounds seem to be related to the degree of satisfaction felt with placement insofar as teachers in this study were concerned. Further examination of Table II will reveal lower ranking groups in each category.

4e. What situational factors are critical for each group?

Table III, Appendix D 1,[9] was developed to show percentages of responses made by each extreme group to each specific situational factor. Table IIIa, Appendix D 2, is a similar table showing raw scores from which Table III was converted.

Any definition of a critical factor as it is related to an extreme group must be made in terms

9. All references to Appendices may be found in original thesis on file, Library, University of Wisconsin.

TABLE IV

TEACHER SCORES (TOTAL RESPONSES) ON SITUATION INVENTORY AND SUPERVISORY RATINGS OF TEACHER EFFICIENCY (RANKED ON SATISFACTION SCORES)

Teacher No.	Sup'visor rating	Satis. Score	Neutral Score	Unsatis. Score	Omit'd Score	Index S/U	Index S/N+U
56	4	298	12	2	4	149.0	21.28
67	4	274	12	24	6	11.4	7.61
26	4	266	28	17	5	15.6	5.91
14	3	257	21	24	14	10.7	5.71
54	4	257	12	43	4	5.9	4.67
23	5	249	53	8	6	31.2	4.08
38	2	248	22	14	32	17.7	6.88
22	4	248	15	40	13	6.2	4.51
28	3	230	13	46	27	5.0	3.89
24	4	229	64	12	11	19.1	3.01
11	3	227	59	19	11	11.9	2.91
61	4	226	17	61	12	3.7	2.89
45	5	224	29	55	8	4.1	2.66
6	3	222	44	38	12	5.8	2.71
65	4	222	39	44	11	5.0	2.67
25	5	221	0	38	57	5.8	5.81
4	4	220	51	21	24	10.5	3.05
66	4	219	18	56	23	3.9	2.95
15	4	215	56	35	10	6.1	2.36
17	3	211	45	48	12	4.4	2.26
31	3	210	61	20	25	10.5	2.59
7	3	210	15	57	34	3.7	2.91
64	3	207	43	62	4	3.3	1.97
43	4	207	26	79	4	2.6	1.97
69	5	206	41	69	0	2.9	1.87
51	3	201	84	26	5	7.7	1.82
27	2	200	11	74	31	2.7	2.35
59	4	200	4	99	13	2.0	1.94
10	5	187	7	107	15	1.7	1.64
37	3	180	65	64	7	2.8	1.39
41	3	178	122	16	0	11.1	1.29
2	5	178	83	51	4	3.5	1.31
9	4	177	90	39	10	4.5	1.37
53	3	171	88	30	27	5.7	1.45
50	3	170	84	23	39	7.4	1.58
12	3	167	66	33	50	5.1	1.68
57	4	166	66	66	18	2.5	1.25
21	3	165	62	42	47	3.9	1.58
46	4	160	111	37	8	4.3	1.08
30	3	158	24	57	77	2.8	1.95
34	3	157	37	74	48	2.1	1.41
29	3	155	41	107	13	1.4	1.05
1	4	154	34	39	89	3.9	2.11
72	1	152	138	16	10	9.5	.99
47	5	148	62	87	19	1.7	.99
20	3	145	98	57	16	2.5	.93
49	5	145	134	28	9	5.2	.89
63	3	143	45	120	8	1.2	.87
16	3	141	72	62	41	2.3	1.05
71	4	141	26	24	125	5.9	2.82

TABLE IV (Continued)

Teacher No.	Sup'visor rating*	Satis. Score	Neutral Score	Unsatis. Score	Omit'd Score	Index S/U	Index S/N+U
44	3	141	10	7	158	20.1	8.29
42	4	135	23	71	87	1.9	1.43
32	3	131	88	93	4	1.9	.72
48	4	130	118	68	0	1.9	.69
5	4	117	151	30	18	3.9	.64
55	4	113	148	42	13	2.7	.59
8	4	113	124	57	22	2.0	.62
62	3	112	16	147	41	.76	.68
3	4	99	116	40	61	2.5	.63
36	4	90	173	40	13	2.3	.42
40	3	88	201	20	7	4.4	.39
52	3	87	53	23	153	3.8	1.14
13	3	85	140	75	16	1.1	.39
60*	3	80	34	189	13	.42	.36
33	3	77	104	131	4	.58	.32
70	4	75	192	48	1	1.6	.31
35	4	75	176	29	36	2.6	.36
68	2	73	139	20	84	3.7	.46
19	3	70	210	26	10	2.7	.29
18	3	35	215	52	14	.67	.13
58	4	15	253	45	3	.33	.05
39	3	10	162	118	26	.084	.03

*Outstanding (5); Above Average (4); Average (3); Below Average (2); Poor (1).

of an arbitrary standard. It seems logical to assume that, for these extreme groups, those factors toward which they responded with extreme dissatisfaction might be termed "critical." Surely, for a teacher belonging to what was believed to be an extremely satisfied group, those factors toward which responses of dissatisfaction were made might be termed critical. Likewise, for a teacher belonging to what was believed to be an extremely neutral group, those factors toward which responses of dissatisfaction were made could also be defined as critical. In the same manner, for teachers belonging to an extremely dissatisfied group, those factors toward which a greater degree of dissatisfaction was felt than the total group responses might be termed critical.

It was assumed for this study that the 50 percent level would serve as the standard for the satisfactory and neutral groups and the 60 percent level for the unsatisfied group. Factors toward which more than 50 percent of teachers in the Extremely Satisfied groups responded with dissatisfaction would thus be identified as critical to each respective group. Likewise, factors toward which more than 50 percent of the teachers in the Extremely Neutral groups and those toward which more than 60 percent of teachers in the Extremely Dissatisfied groups gave responses of dissatisfaction would be termed critical.

Analyzing Table III, then, and measuring the percentages of unsatisfied responses on each of the 100 critical factors (see above) against these standards, the following situational factors emerged as critical for each extreme group:

EXTREMELY SATISFIED GROUPS

A. Family Income over $5000 group

1. Stage and concert offerings of the community
2. Museums, galleries, zoos in the community
3. The number of faculty rooms
4. Degree of privacy afforded in faculty rooms

B. The 25-26 year age group

1. Museums, galleries, zoos in the community
2. Public forums and lectures in the community
3. The number of faculty rooms

C. Belonging to no clubs now group

1. Convenience of bus schedules
2. Convenience of train schedules
3. Stage and concert offerings of the community
4. Museums, galleries, zoos in the community
5. Public forums and lectures in the community
6. The number of faculty rooms
7. Degree of privacy afforded in faculty rooms

D. Mathematics-Science Major Preparation Group

1. Museums, galleries, zoos in the community
2. The number of faculty rooms
3. Adequacy of classroom aids, laboratory
4. Condition of classroom aids
5. Appropriateness, utility of classroom aids

EXTREMELY NEUTRAL GROUPS

A. Miscellaneous Major Preparation

1. Stage and concert offerings of the community
2. Museums, galleries, zoos in the community
3. Public forums, lectures in the community
4. Freedom of classrooms from disturbance

B. No months experience in Youth Leadership group

1. Museums, galleries, zoos in the community
2. Public forums, lectures in the community
3. Freedom of classrooms from disturbance
4. The number of faculty rooms
5. Degree of privacy afforded in faculty rooms

C. No siblings group

None

D. Parents married 25 years or less group

1. Convenience of train schedules
2. Stage and concert offerings
3. Museums, galleries, zoos in the community
4. Public forums, lectures in the community

EXTREMELY DISSATISFIED GROUPS

A. The 23-24 year age group

1. Evidence of planning in community ap-

pearance
2. Stage and concert offerings
3. Museums, galleries, zoos in the community
4. Public forums, lectures in the community
5. The number of faculty rooms
6. Distance of student residence from school

B. No travel over 500 miles group

1. Stage and concert offerings
2. Museums, galleries, zoos in the community
3. Public forums, lectures in the community
4. Commercial amusements available
5. The number of faculty rooms
6. Type and amount of guidance provided by school
7. Person or persons responsible for guidance
8. Guidance aids available to the teacher
9. Adequacy of school library in all areas
10. Number of faculty assistants
11. Type of help provided
12. The competence of the help
13. Adequacy of professional library
14. Distance of student residence from school
15. Level of student scholarship
16. Student behavior, manners
17. Student attitudes toward learning

C. Lived under 4000 population; placed under 4000 population group

1. Stage and concert offerings
2. Museums, galleries, zoos in the community
3. Public forums, lectures in the community
4. Degree of privacy afforded in faculty rooms

D. Intermediate sibling rank group

1. Stage and concert offerings
2. Museums, galleries, zoos in the community
3. Public forums, lectures in the community
4. Degree of privacy of faculty rooms
5. Distance of student residence from school

Certain factors emerge as common sources of dissatisfaction for all extreme groups. Stage and concert offerings, or apparently the lack of them, seem to be one of those which make for dissatisfaction in placement. Museums, galleries, zoos, or the lack of them in a community is another such factor.

Do first year teachers, by necessity living in a strange community, feel a need for such educational contacts which might act as their substitute for combating the unfamiliarity of the teaching community? Are first year teachers, either by their own inability to make satisfying friendships, or the inability of the community to accept them on somewhat intimate terms, desirous of an environment similar to the college environment which they recently left? The reader may have other interpretations or reasons why the above situational factors seem critical. It is apparent that they might well be considered by placement officials and applicants, however.

The apparent dissatisfaction shown by the teachers of this investigation to the above two factors might be just an indication that the community lacked these conditions. The teachers may have rated the situation rather than their degree of satisfaction with it in regard to each factor.

The number of faculty rooms and the degree of privacy connected with them were other factors which were sources of dissatisfaction to more than one extreme group. Are teachers, who belong to extreme groups, by virtue of their emotional makeup, the ones who need to be away from students more often? Many schools have recognized this need for teachers and have provided faculty rooms; it seems evident from the responses that such a provision would be advantageous for all schools.

For Mathematics and Science teachers classroom aids and laboratory facilities were critical. It is apparent that, in these days of teaching with visual and manipulatory aids, mathematics and science teachers feel dissatisfied when they have not the facilities to teach in the manner they have been taught to teach.

More situational factors emerged as critical for the extremely dissatisfied groups. This was to be expected. The group which had the greater number of critical factors was the group which had no trips over 500 miles away from home. Is there some relationship between the amount of travel and satisfaction with placement or the ability to adjust to new situations? Is the amount of travel an important element in the background of teachers?

The critical situational factors identified above may serve to indicate to the reader that there are some factors about which teachers have a greater feeling of dissatisfaction; they may serve as a basis for more specific investigation of a teaching situation, and they might indicate to schools and communities those factors which need improvement if satisfaction of teachers is felt to be important to teaching success.

5. What relation exists between placement satisfaction and teaching success?

If it can be shown that a high positive correlation exists between placement satisfaction and teaching success, the above differences will have much more significance to placement and it will behoove officials and applicants to consider the situational factors more carefully prior to placement.

Table IV identifies each teacher in this investigation by number and lists supervisory ratings and Satisfaction Scores for each. Two indices were calculated. One was obtained by dividing the Satisfaction Score for each teacher by his or her Dissatisfaction Score. The other index was the quotient obtained when the Satisfaction Score was divided by the sum of the Neutral and Dissatisfaction Scores.

As was stated above, supervisory ratings were used as the criterion of teaching success. A composite rating was asked on a five-point scale: Outstanding, Above Average, Average, Below Average, Poor. For statistical purposes, then, numerical weightings were assigned: Outstanding, 5; Above Average, 4; Average, 3; Below Average, 2; Poor, 1.

The Spearman-Brown formula was used in calculating r's between the criterion scores and all Satisfaction Scores and indices. The following were obtained:

Correlations Between Teaching Success and

Satisfaction Scores	+.19
Neutral Scores	-.10
Dissatisfaction Scores	-.02
Omitted Scores	.00
Index S/D	+.22
Index S/N + D	+.10

For the teachers in this investigation low positive correlation was found between satisfaction with the teaching situation and teaching success. Negative correlation would be expected for Neutral Scores and for Dissatisfaction Scores because of the manner in which responses to each factor was a choice of one of the three.

The relationship shown above seems to contradict the hypothesis made at the beginning of this study, namely, that satisfaction with one's placement is related to teaching success. Perhaps the situation, as herein defined and the amount of satisfaction felt toward it does not hold the importance implied throughout the study. The situation is a complex of many, many factors. While this study was limited to the more tangible factors, the significant ones to teaching efficiency might lie more in attitudes, values, prestige factors, and other intangible factors.

However, the relationship is positive, though small, and other investigations with fewer, better defined factors may reach closer positive correlation. The writer holds the view that the technique and design of this study is more at fault than is the hypothesis in identifying an aspect associated with teaching success.

6. To what degree can placement satisfaction be predicted?

The seventy-two teachers in this group investigated differed widely in their reactions to their situation. When they were ranked on the basis of their Satisfaction Scores, Neutral Scores, and Dissatisfaction Scores, extreme individuals stood out and five in each category were chosen for further study. For each one of these 15 extreme teachers, then, a case study was attempted to find, if possible, other data than that collected by the Situation Inventory which might indicate some reasons for being extremely satisfied individuals, extremely neutral individuals, or extremely dissatisfied individuals.

The files of the Teacher Personnel Research Bureau at the University of Wisconsin were used as the main source of information for the case studies. While these teachers were in training, autobiographies, data booklets containing many more background facts about the teacher, themes, test scores, and practice teaching records were collected. This information was supplemented by grade point average found in the office of the Registrar, University of Wisconsin.

Some incomplete folders made it inadvisable to study the five most extreme individuals in each category. Instead, the five who ranked the highest with the most complete folders were chosen. Numbers 26, who ranked third; 54, who ranked fifth; 38, who ranked seventh; 22, ranked eighth; and 28, who ranked ninth were selected as extremely satisfied teachers. Numbers 58, who ranked first on the basis of neutral scores; 19, who ranked third; 40, ranked fourth; 5 ranked ninth; and 68, who ranked twelfth, were chosen as extremely neutral teachers. Numbers 60, who ranked first on dissatisfaction; 62, who ranked second; 33, who ranked third; 63, ranked fourth; and 39, who ranked fifth, were picked out as extremely dissatisfied teachers. Are there any reasons to be found in other data for the degrees of satisfaction expressed by these teachers? Are we collecting the right kind of information to be able to better predict satisfaction with placement?

EXTREMELY SATISFIED TEACHERS

Teacher No. 26:

This individual is a white female, 22 years of age, who has one older sister. Her parents are

Italian-born, and the father is a small grocery store proprietor in a city of approximately 80,000 population. Her mother also works in the grocery store and occasionally the father sought work in a factory to supplement earnings from the business. Both mother and father completed the sixth grade of elementary school and they have been married twenty-six years.

This teacher has lived with her parents all of her 22 years, and attended public schools without changing schools. She reports that she was shy as a child, that she felt inferior because of foreign parentage. She thought highly of her teachers although there was no close association with them until the fourth grade. Here, she reports, she "came out of her shell" and became attached to her teacher. However, her fifth grade teacher seemed to reject her, but in the sixth grade she was allowed to present a series of radio assembly skits which her teacher and principal commended.

In high school this teacher seemed well-adjusted. She reports she made friends easily, was hall monitor, made the Honor Roll on two occasions. She belonged to the Girl Reserves, was president of an Italian Club, sang in the cappella choir, and achieved a First Award in a National Serious Declamation contest. She ranked in the upper two percent of her high school graduating class.

In the University she continued many outside activities. She worked in speech and dramatic groups, chorus, and Girl Reserves. She played basketball and softball and served as a reporter for her college newspaper for a short time. She acted as a dormitory leader and a member of the student council and, despite all activities, she maintained creditable scholarship. Her grade point average as a freshman was 2.13 and she was graduated with a grade point average of 2.54.

She cautions that she is no genius; she calls herself a "plugger." She reports that she was ninety-five percent self-supporting in college working as waitress, clerk, typist, and playground leader during various summer vacations.

Teaching was her first choice of occupation followed by small business, dramatic work, or public relations work. She played school as a child, and did baby sitting. As a student, she acted as classroom monitor, did tutoring, directed a play, and served as a teacher's helper. She reports that she enjoyed all experiences of such nature.

She is a non-veteran, a non-traveler, but a wide reader and a member of three social clubs. The Minnesota Multiphasic shows no emotional maladjustment while the ACE psychological examination ranks her in the 47th percentile and the English Cooperative Test rates her in the 59th percentile. Additional information on this teacher was unavailable.

Teacher No. 54:

This teacher is a single white female of 22 years of age, who majored in Home Economics while minoring in Chemistry. She has one younger brother. The family, both parents of whom are college graduates and married 26 years, has always lived in a community of 10,000 to 100,000 population where the father is an attorney.

This teacher attended public schools and, because the location of the family home was stationary, no changing of schools was necessary. She was entirely dependent upon the family during her school years. She made two trips of over 500 miles away from home during her lifetime, joined three social clubs but dropped membership in two. The attempted three jobs for pay had short duration. Significant among her experiences were thirteen months spent in youth leadership, nine as a Girl Scout leader and four as a tutor and camp counselor.

She reports she always liked school because it was easy for her. She remembers a disappointment in second grade where, because of seating problems, she was taken "back" to the first grade room. She received much attention from her teachers, however, which tended to give her more security. In the fourth grade she started violin instruction and about the same time it was found necessary that she wear glasses which she disliked to do. No other experiences during elementary school were reported except that she played with boys almost entirely.

In high school she was interested in vocal and instrumental music; she sang in a church choir and in the high school chorus. She belonged to Girl Reserves and Girl Scouts. Experiences with children included baby sitting, teaching Sunday school, and helping the kindergarten teacher all of which she liked to do. She ranked in the 89th percentile of her high school graduating class, standing 24th in a class of 216.

Few activities are reported in college other than that she was elected to several offices. One of these was social chairman of a leading sorority. The American Council Psychological Examination placed her in the 89th percentile and the Cooperative English Test in the 59th percentile upon entering college. Her choice of occupations in order of rank were given as medicine, airline hostess, Red Cross worker, kindergarten-primary teacher, or professional music. She finished four years of college with a grade point average of 2.16, including an excellent rating on her required student activity with Girl Scouts plus a student teaching rating of B.

Teacher No. 38:

This person is a single white female, 21 years of age, who majored in Spanish and minored in

English and Latin. She comes from a large family with three younger brothers and sisters and five older siblings. She has lived with her parents all her life, fifteen years on a farm and the rest in a small village of under 500 population.

Her parents have been married thirty years. The father, a graduate of high school, is a field man. The mother is a college graduate with six years of teaching experience.

The subject attended country elementary school, public high school and college and changed schools once at each level except college. She was entirely dependent upon her parents during both high school and college, though she did try one job in a canning factory which was of short duration.

She has made two trips of over 500 miles from home within the United States. A non-veteran, she joined seven social clubs but dropped membership in four. She reports many successes in school although her elementary experience was hampered by an older brother and a consciousness of red hair which caused a hesitancy to recite. Upon moving to a new school she encountered a new teacher whom she didn't like.

During high school she had added responsibilities at home but she found time for many extracurricular activities. She was active in "boy sports" as she called them which included basketball, volleyball, tennis, swimming, and bowling. She also took part in band, chorus, and dramatics. She had experiences as baby sitter, classroom monitor, teacher's helper, and even directed a play as a senior. She reports that she enjoyed all of these experiences. She ranked in the 80th percentile of her high school graduating class and stood sixty-fourth in a class of 316.

Almost no college activities are reported except membership in a sorority. She did spend fifteen months in youth leadership as an assistant Girl Scout leader and camp counselor. She was also a 4-H member. Her first choice of occupation is one in which travel is a big factor although the Strong Vocational Interest Test for Women show her highest interests to be in office work, housewife, or stenographer. This same test gave her a B-minus rating in Elementary Teaching and Mathematics or Science teaching.

Upon entering college the American Council Psychological Examination placed her in the 51st percentile and the Cooperative English in the 36th percentile. She finished the University with a grade point average of 1.79.

Teacher No. 22:

This teacher is a single white female, 25 years of age, who majored in English and minored in Spanish. She is a member of a farm family with three older brothers and one older sister. She has lived with her parents on the farm seventeen years and with relatives five years in a city of over 100,000 population. The parents have been married thirty-five years; only the father completed eight grades of elementary school.

This subject attended two public schools, elementary and high school, one parochial college and one public college. She reports 40 percent independence during high school and eighty percent independence during college. She has made four trips over 500 miles from home, one to foreign lands. A clerical position during high school and twelve months service as a WAVE may explain both her degree of independence and extent of travel.

She reports that she liked school generally though she thinks of herself as a shy child and her second grade teacher in particular being of the old school, "augmented the insecurity and inadequacy (she) felt." She was in continual competition with another girl for scholastic honors but won out in the end. She loved her seventh grade teacher but the school nurse was "an ogre." At this time the family renounced their church but the subject later made amends for the family by professing faith.

In high school the subject was chosen as French Club president, High School Girl of the Week, and an officer in the Girls Athletic Association. She was active in tennis and bowling in addition to glee club, honor society, dramatics, music, and 4-H. She cared for friends' children acting as baby sitter but did not like the experience. No high school percentiles were available but the subject did rank fourteenth in a class of 139 graduating from high school.

Few experiences were reported during college. She worked as a Tour Guide one summer. She comments on the profitable WAVE experiences of travel, hard study, and being picked for different assignments. Upon release by the Navy she helped in a polio hospital for a short time before resuming school.

She received an excellent student activity rating for her experiences with mentally retarded children during her senior year at the University. The Strong Vocational Interest Inventory for Women show her highest interests in occupational therapy, nursing, or laboratory technician. On the same inventory B ratings were earned in Physical Education teaching and only a C rating as Elementary or Home Economics teaching. She ranked her choices of occupations as travel first, teaching second, and medicine third. The subject finished the University with a grade point average of 1.87.

Teacher No. 28:

This individual is a single white male, 25 years of age, who majored in History and minored in Political Science and Sociology.

His family life consisted of living with parents and two younger siblings in a city of 25,000 where his father was a mechanic and his mother a store cashier for fifteen years. The parents both completed seven grades of elementary school and, at the time of this report, had been married 27 years.

This subject attended parochial elementary school six years, public elementary school two years, and public high school and college. He reports ten percent independence while in high school working two summers at unskilled labor. In college his degree of independence rose to ninety percent because of veteran status. He served thirty-four months as an airforce staff sergeant, twenty-three of which were in foreign assignments. Prior to this time he had done no traveling but had joined four social clubs. He reported no experience in youth leadership.

Of his elementary school experience he reports that he "was shy, timid, sensitive, and didn't make friends easily." He was weak and undersized physically, did not show well at games, was last chosen by leaders, and hated athletics. He compensated for this by reading avidly of travel and adventure. His first two years of elementary education was spent in a school which was connected with a teacher-training institution. This experience he did not like but the stricter discipline and supervision in the parochial school where he finished his elementary work was more satisfying to him.

Enrolled in a college preparatory course in high school, he found time for a variety of experiences. Here he played baseball, softball, and basketball, and belonged to special interest clubs in Art, Publications, Library, and Speech. He was art editor of the school newspaper. He reports that he found many successes and won prizes in art in high school but was advised out of that field by a teacher of art. He served as study hall monitor on several occasions. While in high school he was in turn a newsboy, a baker's helper, and a helper in a canning factory. He ranked in the 94th percentile of his graduating class, standing sixth in a class of 102.

His attendance at college was helped by a $150 scholarship. He entered with a percentile ranking on the American Council Psychological Examination of 57 and on the Cooperative English Test of 63. The Minnesota Multiphasic showed no abnormality while the Washburne Social Adjustment Inventory showed him to be well adjusted socially.

This subject gave teaching as his first choice of occupation followed by commercial art as second. The Strong Interest Inventory for Men showed him highly interested in Music, Social Science teacher, or city school superintendent followed closely by the ministry or work as YM CA Secretary. He reports few activities at the University but he liked the "impersonal relations between student and professor."

He finished the University with a grade point average of 2.10.

EXTREMELY NEUTRAL TEACHERS

Teacher No. 58:

This teacher is a white male, 28 years of age, married nearly one year. He majored in Agriculture and minored in Biology.

An intermediate member of a farm family of five children, he lived with the parents all his life. When he was 23 the parents, who had been married thirty years, separated and he went to live with the mother in a city of 4000 where she worked as a waitress. Both parents had completed the seventh grade in elementary school.

This subject attended a parochial elementary school six years and public elementary school two years. He attended one public high school and one public college. He reports a degree of independence during high school of thirty-three percent and in college one hundred percent. Veteran status accounts for this degree of independence since he had been technical sergeant in the Air Force with thirty-six months service, of which eighteen were in foreign countries. Prior to the service experience he had traveled little but had worked on the farm and at unskilled labor all of the time. He reports no months experience in youth leadership, but had joined two social clubs.

He reports few experiences during elementary and high school days. He enjoyed playing school, being class monitor, helping teacher, and caring for children. During high school he was a member of Future Farmers. He was fortieth in a class of 86 graduating from high school.

Entering college with a percentile rank on the American Council Psychological Examination of 34 and on the Cooperative English Test of 13, he was uncertain as to his vocational plans. He thought he wanted to be a farmer, an industrial machinist, an aviator, or a teacher. He reports college activity in intramural sports, dances, and fraternity. He reads news magazines regularly. His student teaching rating which he earned was a B. He finished the University with a grade point average of 1.43.

Teacher No. 19:

This person is a single white male, 24 years of age, who majored in Art and minored in English. He was a member of a family living in a city of 75,000 population. He lived with his parents 21 years and with friends three; he has one older sister.

His mother and father had been married 32 years and both had attended high school, the

father graduating. The father, now retired, was a factory foreman.

This subject attended only one public elementary school, one public high school, and one college. He reports entire dependence upon parents during high school, but a forty percent independence during college. A non-veteran, he contributed to his college education by doing clerical work, factory jobs, and manual labor during summers. He reports no travel of any distance from home but he did join one social club during college.

In elementary school he felt insecure. He felt he was punished wrongly in the fifth grade. In the sixth he got into a fist fight and had to pay for a broken bookcase about which the families quarreled. He did not care for sports, feeling that a facial defect and a tall and skinny physique caused him to be chosen last in games on the playground.

In high school he felt lonely as a freshman. He failed two courses the first semester and after three semesters left school and acquired a job in a factory. Returning a fourth semester he failed again and got a job as an apprentice draftsman with the State Highway Commission. Returning to school again a year later, he finished high school, ranking in the 86th percentile of his class and standing twenty-eighth in a class of two hundred. The Sciences and the Arts were his choices of high school subjects; he reports that a music teacher was a great influence on him.

He entered the University with a $100 scholarship and a percentile ranking on the American Council Psychological Examination of 83. His score on the Cooperative English Test showed him to rank in the 54th percentile. He survived two probations imposed on him by the University and finished with a grade point average of 1.44. He was a member of the National Guard while in college, went to dances, played a French horn in the band, and belonged to the National Honor Society. He earned a good rating in his student activity as assistant Scout Leader and a student teaching rating of B plus, although he had reported not liking experiences of classroom monitoring and tutoring.

Teacher No. 40:

This individual is a single white female, 22 years of age, majoring in Art and minoring in English. An only child, she has lived with both parents twenty years until a divorce broke up the family. Since that time she has been living with the mother. The father, a contractor, moved his family frequently and this subject has lived in five different cities of various sizes.

She attended two public elementary schools, two high schools, and one college. While she was dependent entirely upon her parents during high school, she has, of necessity, contributed to her college education. She reports she was fifty percent independent during college.

She worked as a sales girl, a clerk, a waitress, a laboratory technician in a war plant, and as a receptionist. A non-veteran, she reports no travel trips over 500 miles from home but she did join three social clubs and retained membership in all. She taught Sunday school.

She reports a generally happy school life, although she was a year younger than her classmates. At times she remembers being teased and she hesitated to participate in class activities.

In high school she liked Art and Physical Education and came under the influence of several teachers whom she liked very much. She became a class officer in her junior year, was a member of the student council and Pep Club. She belonged to Girl Scouts, Literary, Latin, and Art clubs, and for a time was a member of the glee club. High school was not without its problems, she reports. The "Prom Dress Struggle" each year was a major one and she still remembers the time she was one of a group of students who skipped school and were punished. She finished high school ranking in the 96th percentile of her class and standing fourth in a class of ninety-eight.

A scholarship made it possible for her to attend the University. She entered with a percentile ranking on the American Council Psychological Examination of 51, and on the Cooperative English Test of 50. Her first choice of occupations was given as teaching followed by social work as a second field. She reported many experiences with children: baby sitting, tutoring, helping teacher, teaching Sunday school classes. All of them she enjoyed.

College activities seem to have been limited to dances and parties. She received an A-minus as her student activity rating and an A-minus in student teaching. She finished with a grade point average of 2.46.

Teacher No. 5:

This teacher is a white male of 27 years of age, married and having one child. He majored in History and minored in Economics.

Having one younger brother, he lived with parents for twenty years in a city of 24,000 population. The family moved three different times and the subject attended two different public elementary school and one public high school.

His father, an elementary teacher, cabinet maker, and school custodian, completed two years of college level work. His mother completed only eighth grade. The parents had been married 30 years.

This teacher reports ten percent independence during high school and one hundred percent during

college. A veteran of thirty-six months service as an army staff sergeant, twenty of which were in foreign lands, he has traveled widely both before and during his war experience. He has been married five years and has engaged in sales work on two occasions since that time.

He reports a happy school-life in general. As an elementary school student he was classroom monitor on several occasions and helped direct a play on one. He doesn't remember if he liked the experience. He does remember a shameful punishment in third grade when he was made to stand in a cloakroom for a long time. He has favorable memories, however, of the sixth grade when he encountered his first male teacher.

In high school he attributes his liking of the Social Studies and disliking English to the teachers he had. He was active in athletics, especially basketball and tennis. Other activities included the lead in a class play on two occasions, playing trombone in the band, and being a member of the Annual staff. He was a member of the National Honor Society. During high school his work experience included being a church janitor, a grocery clerk, and a truck driver. He finished high school 78th in a class of 375.

He reports few college activities except proms and parties. He reads widely of popular magazines and has a collection of fiction and history books. He served as a Boy Scout Leader for his student activity requirement and before and after the requirement was met. He received an excellent rating from his supervisor.

The Strong Interest Inventory for Men gives him an A-rating in Personnel Manager work, as a Social Science teacher, and as a city school superintendent. It gives him a B-rating as a Mathematics or Science teacher. He finished the University with a grade point average of 1.90.

Teacher No. 68:

This person is a single white female of 34 years of age, majoring in Home Economics and minoring in Speech Correction. An only child, she has lived with her mother for twenty-three years. Her father died when she was nine years old. Most of her life she has lived in a city of 1200 population, moving only recently to a metropolitan area. Her mother has been a seamstress. Both mother and father completed the eighth grade.

This teacher attended two different elementary schools, two public high schools, one trade school, and the University. In high school, her degree of independence was zero percent while in college she was 100 percent independent after working three years in a photographer's shop, two years in general work of a clerical type, and four years in an office of the Navy Department, Washington, D. C.

Although a non-veteran, she has traveled widely, once to a foreign country. She now belongs to four social clubs and was active in many civic enterprises between high school and University. Included among these was membership in civic dramatic groups, civic music groups, volunteer work in the Red Cross, Infantile Paralysis drive, and community war agencies.

Elementary school seemed full of problems to her. She was "put back" in first grade because of seating difficulties; she ran away at recess to avoid teasing classmates; she felt a loss of prestige because of her widowed mother in a seamstress role; she was made to sing alto by the teacher and then shamed when she couldn't do it well. She was afraid of growing tall and developed round shoulders. She still has the feeling, gained during elementary school, that she must fight for what she wants.

In high school she felt she was under-graded but took part in basketball, debate, declamatory work, and accompanied the glee club. She was a member of the 4-H for a short while, attended school dances and movies as often as possible. She was a member of Hikers Club and a Biking Club. She stood third in a class of nineteen when she was graduated from high school.

College activities included being advisor to Y-Teens and a member of College Players. She was chosen to the College Board of "Mademoiselle" Magazine and spent a week in New York in an advisory experience. She reads widely of popular magazines and fiction but dislikes news reading.

She ranked in the 67th percentile on the American Council Psychological Examination and in the 76th percentile on the Cooperative English Test. She earned a student teaching rating of A-minus and finished the University with a grade point average of 1.68.

EXTREMELY DISSATISFIED TEACHERS

Teacher No. 60:

This individual is a single white female, 23 years of age, majoring in Home Economics and minoring in Science.

She lived with parents and eight older siblings on a farm for fourteen years after which the family moved to a city of 60,000 population. For five years following this family migration then, this subject lived with friends.

The parents had been married forty-one years. The mother had completed the sixth grade, the father the ninth. Both were hard-working farm people.

This teacher attended public schools and the same one at each level. She reports complete dependence upon parents during high school but complete independence during college. Office

work, clerking, waitress work, and domestic service were included among her work experiences. A non-veteran, she traveled some making four trips over 500 miles away from home. She joined ten social clubs and still belongs to three. She tried camp counseling one summer for her only experience in youth leadership.

Her elementary school experience included having sisters as companions and in the same classroom until the fourth grade. This made her withdraw somewhat from activities, she believes. She remembers two embarrassing situations wherein she was punished "for trifles," one in the second grade and one in the fifth grade. She remembers her sixth grade teacher as having the most influence upon her and, later, she was eighth grade valedictorian. The fact that her father was on the school board "made (her) defend her grades" but the sisters belittled the honor.

Her Home Economics teacher in high school exerted a strong influence upon her. Although her activities were limited because she lived outside of town, she found time for some parties and movies. She was a member of the Honor Society, Student Council, and Red Cross Council. Among her hobbies and pastimes were included knitting, cooking, sewing, and some sports, particularly bowling. She read widely in popular home magazines. She finished high school ranking in the 97th percentile of her class and standing eleventh in a class of 315.

Few college activities were reported. She entered college ranking at the 67th percentile on the American Council Psychological Examination and at the 50th percentile on the Cooperative English Test. She indicated, as a freshman, her choice of occupations in the following order: dressmaker, social worker, teacher, model, or musician. The Strong Interest Inventory for Women gave her an A rating as housewife, B-plus as office worker or Home Economics teacher, and a B as an Elementary teacher and stenographer. She reported several experiences with children including baby sitting, classroom monitor, teacher helper, and Sunday school teacher. She earned a student teacher rating of B and finished the University with a total grade point average of 1.67.

Teacher No. 62:

This teacher is a single white female aged 22, majoring in History and minoring in English and Spanish. She has two older siblings and one younger brother.

This person lived with both parents until they were divorced when she was ten years old. The father, a restaurant owner and manager, completed the third grade. Living with the mother alone since the divorce, they moved to a metropolitan area where the mother worked in a factory. The mother had completed the eighth grade.

The subject attended one parochial elementary school, one public high school, and one public college. She reports her degree of self-support in high school as ten percent and in college as twenty percent, as a result of manual labor jobs during summer vacations. A non-veteran, she has, however, made three trips over 500 miles away from home. She joined two social clubs during her high school years.

Her life in public school was one of many problems of adjustment. She had to compete with older sisters, was slow to develop physically and was seldom in good health. She "dreaded the nurse coming." She remembers being scared by school, by the "man at the corner," and by some teachers.

Being conscious of the family difficulties, of a mother in poor health, and the impending divorce, she worried about going to high school and changing schools. The father returned to the land of his birth and the mother had a difficult time "keeping the family alive."

She admits to inferior feelings, a quick temper, and wishful dreaming. She was, in her words, the "foreign kid, the unwanted child." She hated her senior year in high school, feared all tests especially timed tests, and "didn't dare smoke or cut classes" like the rest of her class members did.

Despite the fact that she "told the family off" she was graduated from high school as one of the valedictorians in the 99th percentile of the class and ranking second in a class of 165 members. No activities of college were reported but she entered the University scoring at the 79th percentile on the American Council Psychological Examination and at the 76th percentile on the Cooperative English Test. She finished the University with a grade point average of 1.98, earning a student teaching rating of A-minus.

Teacher No. 33:

This person is a married white male, 33 years of age, a graduate student majoring in History with Music and Economics minors.

With three younger brothers, this teacher lived with parents twenty years. The family moved often. He spent his first seven years on a farm, the next six in a city of 6000 population, and the remainder in a larger city. The father, a high school graduate, was a salesman for 20 years following the departure from the farm. He died in 1941 having been married 27 years. The mother completed the eleventh grade.

This teacher attended four public elementary schools, two public high schools, one private college, one public college, and one trade school. His degree of self-support in high school was re-

ported as ten percent and in college as fifty percent, having worked as sales clerk, factory hand, and unskilled worker. A veteran of forty-one months service, fourteen of which were foreign, he had, however, traveled widely before joining the army. He had made six or seven trips over 500 miles away from home.

He has been married six years. There are no dependent children. He reports not being much of a "joiner", having affiliated with only one club. A wide range of youth leadership activity was experienced; he taught Sunday school classes for four years, directed a church youth fellowship two years, directed a choir three years, acted as Boy Scout leader one year, and tutored a sick boy for ten months.

No report of his activities in school were available. His scholastic record, too, was missing except that he was graduated from a four-year private college with a grade point average of 2.28.

Teacher No. 63:

This teacher is a married white male, 24 years of age, majoring in Agriculture and minoring in Science.

With two older siblings and one younger this teacher lived with both parents on a farm for seventeen years after which he left the family and lived in a city of 12,000 population until he joined the Navy. The father and mother, married 28 years, had both completed the eighth grade and had been farmers during their entire lifetimes.

The subject attended one public elementary school, one public high school, and two public colleges. He reports his degree of independence in high school as fifty percent and in college as one hundred percent, working as farm hand, clerk and unskilled worker. A veteran of 33 months service, ten of which were foreign, he had traveled little prior to his entry into service.

He joined fifteen clubs and now belongs to five. He has been a Scout leader, high school class president, and division leader on a ship. Married three years, he has one child.

Records of his activities and experiences in elementary and secondary school are lacking but he was graduated from high school ranking in the 97th percentile of his class and was valedictorian of the 40 graduating seniors. He entered the University indicating that his first choice of an occupation was teaching. Scores on the American Council Psychological Examination placed him in the 87th percentile and scores on the Cooperative English Test placed him in the 54th percentile. He was graduated from the University with a grade point average of 2.24.

Teacher No. 39:

This individual is a single white male 23 years of age, majoring in Physical Education and minoring in Science.

With one older sister he lived with both parents for all of his 23 years in a city of 10,000 population. The father, an invalid the past two years, had been a foreman in a paper mill. He had completed one year of college. The mother, having completed only the sixth grade, remained at home. The parents had been married more than 30 years.

This teacher had attended parochial elementary school, public high school, and public college. He reports his degree of self-support in high school as ten percent and in college as one hundred percent. He worked as manual laborer, lifeguard, factory hand, and factory manager. A veteran of six months of domestic service, he traveled very little. Only one trip over 500 miles was made and that during service. He reports having joined eight clubs and retaining membership in five. His experiences in youth leadership was limited to four months of camp counseling.

No records of his elementary or secondary school activities was available. He was graduated from high school, 46th in a class of 166 and ranked in the 72nd percentile. Scores on the American Council Psychological Examination and on the Cooperative English Test placed him in the 24th and 27th percentiles, respectively. Earning an A in his student teacher rating, playground, he was graduated from the University with a grade point average of 1.74.

The above case studies reveal no evidence, the writer believes, which might be taken as the reason, or cause, of the wide range of placement satisfaction expressed by the fifteen "extreme" teachers. The reader will note, in each category, teachers had many of the same experiences with those in another category. Extremely satisfied teachers seemed to have the same range of experiences and accomplishments as did the extremely dissatisfied ones. All three categories were represented by both sexes, by relatively high and low scholarship, by differences in residence and other experiences.

We can conclude that the above type of information collected on prospective teachers is inadequate to predicting satisfaction with placement. We know that teachers vary in their degree of satisfaction felt toward their teaching situation but we are not collecting the data appropriate to explaining those variations.

Summary

1. The teachers in this study enjoyed a high degree of placement accuracy if satisfaction can be accepted as the criterion of that accuracy. Fifty-five of these 72 teachers were more satisfied with their situation than they were dissatisfied with it or unconcerned about it.

2. As a total group these beginning teachers were more satisfied than dissatisfied or neutral toward their position. Of all responses to all situational factors, 52.3 percent were responses of satisfaction; 16.2 percent were responses of dissatisfaction; 23.3 percent were responses of unconcern or neutrality.

3. Some situational factors emerged as generally satisfactory to the teachers in this study. Over 75 percent of the teachers were satisfied with 24 factors; between 50 and 75 percent were satisfied with 151 factors.

4. There was a general feeling of dissatisfaction toward only a few situational factors. With only four factors were more than 50 percent of these teachers dissatisfied.

5. A majority of the teachers in this study agreed that some situational factors did not affect their liking or disliking their teaching situation. Twenty-one situational factors received responses of unconcern or neutrality from more than 50 percent of these teachers.

6. Responses toward some situational factors were fairly evenly divided between satisfaction, dissatisfaction, and unconcern which indicated a lack of general agreement by the 72 teachers. One hundred such factors were identified and defined as "critical" to placement success for this group.

7. Differences in satisfaction, dissatisfaction, and unconcern toward the total situation was found to exist between groups of teachers of different backgrounds. The 25-26 year age group was more satisfied than younger and older age groups. Men were more satisfied and more unconcerned than women. Teachers majoring in Mathematics and Science were more satisfied while Home Economics majors were more dissatisfied. Teachers whose family income had been over $5000 were more satisfied, while those whose family income was below $2500 were more dissatisfied. Non-travelers were more neutral and dissatisfied, travelers more satisfied. Veterans were more satisfied, married teachers more neutral and dissatisfied.

8. Rankings of total group responses regardless of background classification produced extremely satisfied, extremely dissatisfied, and extremely neutral groups. The most satisfied group, regardless of classification, was the "Family Income over $5000" group; the most dissatisfied was the "23-24 year age" group; the most unconcerned was the "Miscellaneous Major Preparation" group.

9. Some critical situational factors were associated with all extreme groups, some with only one extreme group. Stage and concert offerings, museums, galleries, zoos in the community, public forums and lectures were critical for all extreme groups. The number and privacy of faculty rooms were critical factors for many extreme groups. Associated with only one extreme group, however, was adequacy and condition of classroom teaching aids and laboratory with Mathematics-Science majors group. Factors of commercial amusements and guidance facilities were critical for only the "No Travel over 500 miles" group.

10. A small positive relationship exists between placement satisfaction and teaching success for the teachers in this investigation. A coefficient of correlation of .19 was found between Satisfaction Scores and Supervisory ratings.

11. From data usually collected on prospective teachers the degree of placement satisfaction cannot be predicted. Case studies of extreme individuals in this study revealed no evidence upon which such prediction could be made with certainty.

12. The teaching situation, as defined in this study, is subject to a wide variety of responses. From 72 teachers, satisfactory responses to a single factor ranged from four to sixty-seven, neutral responses from one to forty-six, and responses of dissatisfaction from one to fifty-one.

13. Teachers differ widely in their responses to their teaching situation. The most satisfied teacher found 298 factors satisfactory while the least satisfied gave approval to only 10 factors; the most neutral teacher was indifferent to 253 factors and the least neutral to none; the most dissatisfied teacher disapproved of 189 factors while the least dissatisfied of only two.

14. These teachers found many factors satisfactory which are commonly believed to be unsatisfactory in many situations. Living conditions, community obligations, salary, and administrative relations were included in such factors.

SECTION IV

Summary, Conclusions, and Recommendations for Future Research

The purpose of this study was to investigate the relationship between placement satisfaction and teaching success and to identify situational factors critical to placement. Using as subjects 72 beginning teachers who were graduated from the University of Wisconsin School of Education in 1948, answers were sought to the following questions:

1. With what degree of success are these teachers placed?
2. With what situational factors are these teachers satisfied, dissatisfied, or unconcerned?
3. What situational factors seem critical to placement satisfaction?
4. What teacher backgrounds seem related to successful placement and to critical situational factors?

5. What relation exists between placement satisfaction and teaching success?

6. To what degree can placement satisfaction be predicted?

The principle data-gathering instruments used were: (1) A Teaching Situation Inventory of 316 factors developed for this study, and (2) the Wisconsin Adaptation of the M Blank for supervisory ratings. Additional data was obtained from the files of the Teacher Personnel Research Bureau and from institutional student records.

The general design of the study was confined to a description of teacher satisfaction with the teaching situation and the relationship between the degree of satisfaction and teaching success. Responses of satisfaction, of dissatisfaction, or of neutrality to each of the situational factors of the Inventory plus supervisory ratings of each teacher's success comprised the data. Total responses by each teacher, taken as a measure of placement success, were to be correlated with her efficiency rating; total responses to each situational factor were to be used to discover critical factors of the situation; total responses by each group of teachers were to be used to determine those experiences and backgrounds important to placement. From the ranking of individual teacher scores, extreme cases of satisfaction, dissatisfaction, and indifference could be isolated for which case studies might be assembled.

The study is limited by (1) the extreme length of the Inventory which may have reduced the reliability of teacher responses; (2) the size of the group responding; (3) the fact that respondents were beginning teachers and, according to other research, inclined to be less critical; (4) different teachers responding to a different environmental description of the same situational factor; (5) the lack of exact definition for some situational factors; and (6) the short length of each teacher's service (two to five months) on which supervisors could base their ratings.

Conclusions

The findings of the study permit the following conclusions:

1. There was considerable success in placement of teachers in this group if satisfaction with their situation is accepted as a criterion of placement accuracy. Fifty-five teachers in this study were more satisfied than dissatisfied or indifferent, fourteen were more neutral, and only three were more dissatisfied. Too, 52.3 percent of all responses to all situational factors were responses of satisfaction; 23.3 percent were responses of indifference, and 16.2 percent were responses of dissatisfaction.

2. Some situational factors emerge as satisfactory, some unsatisfactory, and some of no concern to placement success of these teachers. Over half of the teachers in this study found 175 situational factors satisfactory, four they found unsatisfactory, and there were twenty-one factors with which they were unconcerned.

3. Some situational factors seem critical to the placement satisfaction of these teachers. One hundred such factors were identified toward which responses of satisfaction, dissatisfaction, or indifference were fairly well balanced or toward which a high degree of dissatisfaction was felt.

4. The experience background of the teachers in this group tends to be related to satisfaction with placement. Groupings of teachers in this study showed differences in the degree of satisfaction, dissatisfaction, and neutrality felt. The four most satisfied groups were: family income over $5000 (62.7 percent satisfied), the 25-26 year age group (61.7 percent satisfied), belonging to no clubs now group (61.1 percent satisfied), and the Mathematics and Science majors (60.8 percent satisfied). The four most neutral groups were: Miscellaneous majors (31.8 percent neutral), no youth leadership (31.3 percent neutral), no siblings (30.6 percent neutral), and parents married 25 years or less (29.1 percent neutral). The four most dissatisfied groups were: the 23-24 year age group (23.3 percent dissatisfied), the no travel group (22.0 percent dissatisfied), the lived under 4000 - placed under 4000 group (21.7 percent dissatisfied), and the intermediate sibling rank group (21.5 percent dissatisfied).

The experience background of these teachers tended to be related to critical situational factors. Certain factors emerged as unsatisfactory to extremely satisfied and extremely neutral groups. Also certain factors emerged as extremely unsatisfactory to the extremely dissatisfied group.

5. A small positive relationship exists between placement satisfaction and teaching success. The following correlations were obtained between ratings of teacher success and

Satisfaction Scores	r = +.19
Neutral Scores	r = -.10
Unsatisfaction Scores	r = -.02
Omitted Scores	r = .00
Index Satisfaction/Unsatisfaction	r = +.22
Index Satisfaction/Neutral + Unsatisfaction	r = +.10

6. From data usually collected on prospective teachers the degree of placement satisfaction cannot be predicted. Case studies of extreme individuals in this study revealed no evidence upon which such prediction could be made with certainty.

7. The teaching situation, as defined in this study, is subject to a wide variety of responses. Of the 316 situational factors not one received a unanimous response of satisfaction, dissatisfaction, or neutrality. From 72 teachers, satisfactory responses to a single factor ranged from 4 to 67, neutral responses from 1 to 46, and responses of dissatisfaction from 1 to 51.

8. Teachers differ widely in their responses to their teaching situation. The most satisfied teacher found 298 factors satisfactory while the least satisfied gave approval to only 10; the most neutral teacher was indifferent to 253 factors and the least neutral to none; the most dissatisfied teacher disapproved of 189 factors while the least dissatisfied of only two.

9. Contrary to popular belief, these teachers found such factors as living conditions, community obligations, salary, administrative relations, and others satisfactory. One considering teaching as a career will find assurance here.

10. Beginning teachers are more satisfied than dissatisfied with their placement.

Recommendations for Future Research

The teaching situation and its relation to teaching success is a complex problem. It is hoped that this general and descriptive study will open up a number of areas for more specific investigations, the study of which will contribute to our knowledge of the problem. It is recommended that the following areas and problems receive further study:

1. The relationship of experience backgrounds to teacher satisfactions.

2. The actual environmental differences of situational factors in different communities.

3. The relationship of placement satisfaction with other criteria of teaching success.

4. The reactions of different teachers in the same placement situation over a longer period of time.

5. The prediction of placement satisfaction.

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AN ANALYSIS OF SUPERVISORY RATINGS OF ELEMENTARY TEACHERS GRADUATED FROM IOWA STATE TEACHERS COLLEGE

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SECTION I

INTRODUCTION

Of the many unique features of the educational system of our nation, the one which is probably the most characteristic is the extent of local control and the high value placed upon it. Though certain standards have been set up by state and national governments, the actual control of the schools has been placed squarely in the hands of the local community. Within this framework, the one chosen for the position of leadership, the superintendent of the local school system, assumes considerable importance, for it is he who chooses the personnel and sets educational policies. The opinions of these superintendents concerning the teachers prepared in teacher training institutions is of importance to the training institution, regardless of whether the training school agrees with the opinions of superintendents upon such matters or not.

From a variety of candidates offering the proper credentials, the community selects a superintendent, and then, through him, its teachers. The values of the community, or the school board, are dominant in determining the ultimate choice of the administrator, and he in turn recommends to the school board the candidates he wishes as teachers. His opinion is the chief determiner in the hiring of any particular teacher from the candidates offering proper credentials, and in succeeding years it is he who will decide whether to re-hire or to release her, to label her as a success or a failure. Both his professional contacts with her and the attitudes of the community contribute to his opinion of her qualities as a teacher once she is on the job.

Teacher training institutions have the responsibility of educating and helping to place their prospective teachers in the nation's schools. As these colleges continue to prepare teachers and to send them out into the field, they are continually re-evaluating their own goals, their methods of attaining these goals, and the degree to which they are achieving their goals. As they get information concerning the strengths and weaknesses of their teachers in the field, they have grounds and cues for improving their processes of preparation and placement.

Perhaps the most important and the most widely used follow-up method is that of ratings by superintendents or principals. Such ratings have been attacked on several grounds. There is some evidence that, even though the items on the rating scales are presumably independent of one another, the raters tend to look at and to rate on all items in accord with a prior judgment of the general acceptability of the teacher to him. This has been referred to in the literature frequently as 'halo' effect or the spread of general estimate. Another criticism arises from the fact that ratings on rating scales tend to be high, the raters seldom employing more than the upper half of the scale unless forced by the system to do so. Furthermore, the trait names used on the scales are often quite general, vague, and abstract. They may have many meanings and no doubt have different meanings among the raters as well as among those who attempt to interpret the ratings. Other questions that arise in the interpretation of trait ratings are: Can we justify the averaging of the scores together or does not this average present a false picture of the teacher's efficiency? May not a single factor be responsible for effectiveness in a teaching situation? Can single trait ratings adequately evaluate the teacher?

Notwithstanding the several limitations which may be pointed out in the use of rating scales and ratings by supervisors in evaluating teacher efficiency, there are values in the method. The assumption on which this study is based is that su-

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pervisory ratings do contain, with proper interpretation, much valuable information for those concerned with the preparation of teachers.

Purpose of this Study

This study proposed to look at superintendents' ratings of their teachers from two points of view, namely:

1. What can these ratings tell about a particular group of Iowa State Teacners College graduates?

2. What do they suggest regarding rating schemes or systems in general?

Trait ratings on twelve items on a five-point scale were obtained for two hundred twenty graduates of Iowa State Teachers College at the and of their first year of teaching. It was possible to secure second ratings for one hundred twenty-three of these teachers at a later date, and third ratings for sixty-one of them at a still later time on the same instrument. At the time this third rating on the original instrument was obtained, two additional types of ratings also were secured, a general category rating and ratings on a paired-comparison type of instrument. Correlations were computed between the various successive ratings on the same instrument and between the ratings on different instruments, means were compared, and factor analysis techniques were used in attempts to interpret the ratings.

With specific reference to teachers from Iowa State Teachers College answers to these questions were sought:

Are these particular teachers generally acceptable to superintendents?

Do there seem to be any notable differences between the initial ratings given to the one hundred twenty-three teachers who were later followed up and the ninety-seven not re-rated?

What do their superintendents consider the greatest strengths and weaknesses of these teachers?

Are the weaknesses of the teachers somewhat decreased with experience or do they persist in successive ratings?

In what traits do the teachers improve?

It was hoped, also, in analyzing the ratings of these particular teachers from Iowa State Teachers College that some further insight into rating schemes or systems might be gained. Answers to these questions were sought:

What is the extent of agreement in terms of correlations and comparisons of means between successive ratings of the same people on the same instrument?

What are the correlations between the trait ratings for the same people on different instruments?

What is the agreement in terms of correlations, absolute values of means, and rankings of means between ratings of the same people when the raters remain the same and when the raters change?

Does a general factor account for the intercorrelations of the ratings on any of the instruments employed? If not, what is the number of factors needed to account for these intercorrelations?

What are the similarities in the factor patterns of successive ratings on the same instrument? Of ratings on two different instruments?

What are the similarities in the factor patterns of the ratings given to the teachers who left teaching before the second rating and those who were re-rated?

This discussion will be organized in this way: In Section II will be given a brief description of the teachers studied in this investigation, the data-gathering devices used, and the techniques employed for analyzing the data. Section III will contain the findings of this study and some discussion and interpretation of these findings. This section will be divided into two parts: Part One will present the analysis of three successive ratings on the same instrument with emphasis on what these ratings can tell about the particular teachers studied, and Part Two will present the analysis of the simultaneous ratings on different instruments and the factor analyses with a view toward suggestions regarding the rating schemes employed. In Section IV the conclusions of this investigation and their implications for Iowa State Teachers College and for the use of rating schemes or systems for evaluating teacher efficiency will be discussed.

SECTION II

DESIGN OF THIS STUDY

The Teachers Studied

The initial group of teachers studied was composed of 220 elementary teachers who graduated from the two-year curricula (kindergarten-pri-

mary, intermediate grades, or rural) at Iowa State Teachers College in 1946, 1947, and 1948. The two criteria employed in selecting the 220 individuals from the total group of graduates were (1) absence of public school teaching experience prior to graduation, and (2) availability of data among the college records.

Since this study employed ratings sometimes made as much as two and one-half years apart, the group studied was reduced with each successive rating as teachers left the profession or could not be located. At the time of the second rating, returns were obtained for one hundred twenty-three of the original two hundred twenty. The group studied was reduced to sixty-one at the time of the third ratings. To facilitate the discussion the teachers for whom original ratings were obtained but for whom further ratings could not be secured are designated as Group A. The one hundred twenty-three teachers for whom first and second ratings were secured are designated as Group B, and the sixty-one for whom three successive ratings were secured are designated as Group C. Any sub-groupings within these main categories will be indicated and explained in the analysis of data with respect to them.

Data-Gathering Devices[1]

The first data-gathering instrument used in this study was Form 6A Blank, Estimate of Teacher's Qualifications Based on Teaching Experience, in current use by the Placement Bureau at Iowa State Teachers College to secure ratings on their teachers from the employing superintendents. This blank in its general form has been in use at the college for about the past twenty years, having undergone many revisions in specific items from time to time. In constructing the blank the head of the Placement Bureau compiled a long list of traits which he sent to the superintendents in every county seat town in Iowa, the larger towns in Iowa, and representative towns in surrounding states. He asked these superintendents to indicate on which traits they preferred to have information about a teacher they were considering. Those responses were then tallied and the twenty most frequently checked were the ones placed on the rating blank.[2] Since that time, superintendents have been asked at intervals to offer criticisms and suggestions for revisions of the blank. When any change has been contemplated, their further advice has been sought.

The blank as used at Iowa State Teachers College includes twenty items on which the teacher is to be rated. The scale for the rating is as follows: A, Superior; B, Above Average; C, Average; D, Below Average; and F, Unsatisfactory. Twelve of the traits, frequently named in the literature as related to teaching efficiency, were selected for analysis in this study. The traits selected were as follows:

1. Cooperation and Loyalty
2. Knowledge of Subject Matter
3. Courtesy and Friendliness
4. Interest in School Activities
5. Discipline
6. Emotional Poise
7. General Culture
8. Health and Vitality
9. Personal Appearance
10. Resourcefulness
11. Response to Criticism
12. Speech

The grades A, B, C, D, and F were assigned numerical values of 5, 4, 3, 2, and 1, respectively, for computational purposes.

The second measuring device used in this study was a paired-comparison type of instrument constructed by the investigator. The twelve items on the original blank were the basis for the new instrument. The three combinations, Cooperation and Loyalty, Courtesy and Friendliness, Health and Vitality, were split; thus giving a total of fifteen items instead of twelve for the blank. In the paired-comparison scale every item was paired with every other item of the total list of items to be rated. This yielded 105 pairs. The rater was then asked to make a judgment relative to each pair according to the criterion of which trait he thought the stronger trait of the ratee.

The superintendents were asked also to register an opinion about the teacher in a third manner. In this third evaluation they were asked to place the teacher in one of five categories in relation to all the teachers they knew. The five categories were as follows:

Highest	10%
Next highest	20%
Middle	40%
Next lowest	20%
Lowest	10%

Procedure for Collecting the Data

The first ratings on the teachers in this study were obtained through the Placement Bureau at

1. All data-gathering devices employed in this investigation may be found in the Appendix of the original manuscript on file in the Library, University of Wisconsin.

2. Obtained in personal interview with Mr. E. W. Goetsch, Head of the Placement Bureau at Iowa State Teachers College, and who was responsible for the construction of the blank.

Iowa State Teachers College at the end of each graduate's first year of teaching.

In December of 1949 it was decided to secure a second rating on as many of the teachers as could be located at that time. For those who graduated in 1946 and were rated the first time in June of 1947 this second rating thus was made two and one-half years after the first rating and these teachers had a total of three and one-half years of teaching experience at this time. For the 1947 graduates the second rating came one and one-half years after the first rating and they had a total of two and one-half years of teaching experience. The 1948 graduates had been rated for the first time in June, 1949, so the second rating was made one-half year later and the teachers had only one and one-half years of teaching experience at the time.

The same rating blank was used throughout. The superintendents were asked to give ratings on all twenty items on the blank, but the twelve previously chosen were again selected for analysis. These ratings were secured through the office of the Dean of the Faculty who requested the superintendents to supply the rating "for purposes of investigation". One hundred twenty-three ratings were returned.

In December of 1950 third ratings on the Form 6A blank were sought for those for whom both first and second ratings had been obtained and who could be located again. In addition to this repeated rating on the same blank two other ratings were requested, one, on the paired-comparison instrument which has been described, and a second asked for the placement of each teacher into one of five categories on the basis of general merit.

These requests, as the previous one, were sent from the office of the Dean of the Faculty "for the purposes of investigation". Sixty-one complete sets of ratings were returned.

Procedure for Analyzing the Data

The general plan of Part One of this study was to analyze the successive ratings given by the superintendents on the same rating instrument, namely, the Form 6A Blank, with reference to what might be learned concerning the particular teachers studied. Each set of ratings was examined first in terms of the means of the trait ratings and the way these means ranked themselves at any one rating time, second, in terms of comparisons with former ratings, and third, in terms of comparisons of sub-groups into which any one set of ratings might be divided. When the first ratings were examined, the means for those who were not restudied and for the group restudied later were compared with those of the total group and with each other.

The second ratings were subdivided into two groups on the basis of the two ratings being made by the same or different raters. The investigation of these ratings was extended to correlational comparisons between first and second ratings for the total group and for the two sub-divisions. These second ratings were subdivided also in terms of the amount of time elapsing between the two ratings and comparisons of means with the total group and with each other were made.

The only sub-division made of the third ratings obtained for sixty-one teacners was to single out the ones which had been made by the same rater at all three times and to compare the means of the individual trait ratings. Mean trait ratings for the total group were compared with the previous two ratings and correlations between the three ratings computed.

Part Two of this study was focused primarily on rating schemes or systems as such. This phase of the investigation dealt with trait ratings made on three different instruments at the same time, the Form 6A Blank, a paired-comparison instrument, and a general category rating. Comparisons of means of trait ratings on the first two named instruments were made. Correlations were computed between the trait ratings on the two instruments and between the general rating and the trait ratings. For further investigation of the rating systems factor analysis techniques were used. Factor analyses were made of the intercorrelations of the initial trait ratings for the total group, Group A, and Group B, and the factor patterns were compared. The intercorrelations of the second trait ratings for Group B were factored and the pattern compared with their first ratings. The intercorrelations of the trait ratings for Group C were factored also and the pattern compared with the previously obtained patterns. The intercorrelations of the trait ratings on the paired-comparison were factored, likewise. It was impossible, however, to rotate the obtained orthogonal factor matrix to a satisfactory solution.

Validity, Reliability, and Objectivity as They Relate to this Study

A test is said to be valid if it measures what it purports to measure, but actually proving that it is a real measure of what it says it is is often quite difficult and at times impossible. Teacher ratings have been branded as invalid because of their low relationship with pupil changes, student teaching grades, scholarship, and various composites. There is some question as to the use of the term validity in reference to these relationships. Barr (4:15) has indicated that the coefficients are really only correlations with a criterion and not necessarily coefficients of validity.

The rating scales used in this investigation can be assumed to be valid instruments for getting an estimate of a teacher's qualifications based on teaching experience by virtue of construction. The blanks ask for the superintendent's opinion of the teacher, and we must accept his ratings as valid indication of that opinion. In the second place, the traits listed on the blanks are the ones on which superintendents said they wished to have information, thus they must have considered them important in getting an estimate of a teacher's qualifications.

Supervisory ratings have been widely denounced for their unreliability also. However, some questions are raised in view of the differing interpretations of reliability. Cronbach (15) has looked upon reliability as having three aspects: stability, equivalence, and stability plus equivalence.

When looking at the correlation between two ratings made by the same rater using the same rating device but several months apart we may accept a high coefficient as an indication of the stability of the rater's opinion. Whether the rater has changed much or not, the rater's opinion has remained relatively stable. If the correlation between the two ratings is low, however, we are led to ask: What has changed, the ratee's behavior, the rater's opinion, and/or both? It seems entirely reasonable to expect actual changes in the teachers with respect to certain traits, e.g., health, over a span of a year's time. Other causes for variability in the ratings from time to time may include changes in the raters' definitions of the traits, changes in the raters' interpretations of the marking scale, or just unaccountable shifts from day to day such as the popular use of the word unreliable implies.

Correlation coefficients have been computed between the ratings made on the same blank, by the same raters, and for the same teachers, but at different times, for the teachers in this study. However, when all the possibilities for changes are taken into account, little can be said for the coefficients except that they are indicators of the existing relationships between the ratings. They are not interpreted as being indications of the stability of the raters' opinions.

Coefficients have been reported also as reliability estimates in cases where the same raters marked the same teachers on different instruments at different times. If the different instruments could be considered equivalent forms of the same scale, high correlations would be indicative of stability and equivalence. However, a low coefficient might be accounted for from changes in the ratee, changes in the rater, lack of equivalence of the forms, or any combination of these possibilities. Therefore, its meaning would be limited as an estimate of reliability. Coefficients of this type could have been computed in connection with this study, but in view of their limitations, it was not deemed worthwhile.

As the ratings of this particular group of beginning teachers in this study are looked at with respect to what they can tell us about those teachers at the specific time and under the specific conditions given, there is no question of reliability involved. It is as we wish to make judgments about what to expect in the future that a reliability question becomes involved. The opinion of the superintendent is a valid and reliable opinion as it is given. Assuming no change in the ratee, however, would the superintendent still hold to the same opinion a day later or a week later is the point at which reliability is a question.

The third concept of reliability, that of equivalence, has been applied to this study in one respect, —internal equivalence or consistency. The reliability estimates of the scores on the paired-comparison instrument were determined by the Kuder-Richardson technique. This technique yields a measure of the internal consistency of the ratings. The formula (14:66-69) employed for computation was

$$r = \frac{n}{n-1}\left(1 - \frac{Epq}{S^2}\right)$$

in which, in this case, n represents the number of pairs containing any one trait, p represents the proportion of times any one trait was chosen in preference to the others with which it was paired to the possible number of times it could have been chosen, and q is the proportion of times the trait was not chosen. In the instrument employed in this study, for example, the trait loyalty was paired with other traits fourteen times and could have been chosen as the stronger trait in a teacher a possible fourteen times. Therefore, p will be the proportion of times it actually was chosen out of the fourteen possibilities. One minus p, the proportion of times the trait was not chosen, is q. The S^2 is the variance of the distribution of scores for any one trait. This technique yields a reliability coefficient for each trait, which, in effect, actually represents the ability of the superintendents to rank the traits for the teachers they are rating.

The estimates of reliability of the trait ratings obtained are as follows:

Cooperation	.71
Knowledge of Subject Matter	.77
Courtesy	.72
Interest in School Activities	.83
Discipline	.91
Emotional Poise	.81
General Culture	.82
Health	.87
Personal Appearance	.83
Resourcefulness	.83

Response to Criticism	.80
Speech	.72
Loyalty	.76
Friendliness	.84
Vitality	.82

The third aspect of the rating devices considered is that of objectivity. An inspection of the instruments indicates that they do lack objectivity to a considerable degree in that the traits are undefined and quite general in some respects. However, the correlations which were computed between ratings made at different times by different raters cannot be accounted for entirely in terms of lack of objectivity. The fact that they are lower than the correlations made by the same raters at different times may in part be attributed to lack of objectivity, but as a teacher changes positions it is also entirely possible that there may be greater changes in her behavior. Since all of the scales employed ask for opinion rather than an indication of specific behaviors and contain general, undefined traits, they cannot be said to possess any great degree of objectivity.

SECTION III

PRESENTATION AND DISCUSSION OF THE FINDINGS

Plan of this Section

As was stated in Section I, the purpose of this investigation was to study supervisory ratings of selected elementary teachers who had graduated from Iowa State Teachers College from two points of view, namely,

1. What can these ratings tell us about the particular teachers studied?

2. What do they suggest regarding rating schemes or systems?

This section will be divided into two parts corresponding to these two lines of investigation.

In Part One will be presented the data secured concerning the teachers studied through three successive ratings on the same instrument, namely, the Form 6A Rating Blank. The analysis of the three ratings will be made with specific reference to what they can indicate about the Iowa State Teachers College graduates studied. The ratings will be considered in the order in which they were made and each set of ratings has been sub-divided in various ways for more detailed analysis. Rating One will be discussed with reference to the status of the total group of teachers at the time of the initial rating, their particular strengths and weaknesses and the comparisons between the two groups into which the total group of teachers were sub-divided: those who left teaching before the second rating period and those who remained longer in teaching. The analysis of Rating Two will be in terms of the gains or losses in means of trait ratings for the teachers rerated, and the correlational agreement between their first two ratings. These teachers for whom second ratings were obtained have been sub-divided also into two groups: those who were rerated by the same rater, and those who were rated the second time by a different rater. The ratings of these two groups will be compared in terms of means and correlations with their own first ratings and with each other. Rating Three will be analyzed for further improvements or losses in the means of the trait ratings for the teachers for whom third ratings were secured and for correlational agreement with the previous two ratings.

Part Two of this section will deal first with analyses of three simultaneous ratings on different instruments, the Form 6A Blank, the paired-comparison, and the general category, for sixty-one teachers with a view toward suggestions regarding rating systems or schemes. Though some information relative to the Iowa State Teachers College graduates may be gained in the comparisons of the three instruments, the chief focus in this section is on the rating schemes. Agreements among the systems in terms of ranks of means and correlations will be discussed. As a second approach toward studying the rating systems or schemes factor analysis techniques have been used. The intercorrelations of the trait ratings for each of the three successive ratings on the Form 6A Blank and for the paired-comparison rating were factored. The factor patterns obtained will be discussed and compared.

PART I

Analyses of Successive Ratings on the Same Instrument With Relation to Iowa State Teachers College Graduates

Analyses of Rating One

For the initial group of 220 teachers studied in this investigation, 2640 single trait ratings were given on the twelve traits selected for study. The distribution of these ratings were as follows:[3]

3. All original data employed in this investigation may be found on file in the library, University of Wisconsin.

Rating	No. of times assigned
A (Superior)	782
B (Above average)	1292
C (Average)	507
D (Below average)	52
F (Unsatisfactory)	7

Thus it can be seen that very few unsatisfactory and below average ratings were assigned, i. e., 59 or 2. 2 percent of the total number. The number of definitely unsatisfactory ratings was negligible. Either of two conclusions may be reached at this point: either the teachers actually were that good, or the raters were reluctant to use the lower part of the scale. Previous research indicates a tendency for raters to use the upper portion of rating scales. When a scale has only five points, and the teachers are judged to fall mainly in the three upper categories fine distinctions between ratees become impossible.

The means and the ranks of the means of the trait ratings given to the teachers at the end of the first year of teaching are given in Table I. The mean with the highest value was assigned arbitrarily a rank of 1 and the succeeding lower means with ranks such that the lowest mean was rank 12. In the case of a tie in rank, the average rank of the two was assigned to both traits. It is interesting to note that Discipline, often given as the chief cause of failure in beginning teachers (36) has the lowest mean for these teachers and Resourcefulness has the next lowest mean. The items with the highest means are Cooperation and Loyalty, and Courtesy and Friendliness.

For purposes of further analysis, the 220 teachers were divided into two groups: those who left the teaching profession by 1949 or could not be located and so were not re-studied, and those who were teaching in 1949 and for whom second ratings could be obtained. The number who could not be located in 1949 was negligible, a matter of three or four, and in view of the variety of sources used to locate the teachers it is a reasonable assumption that they actually had left the profession. The group which was not restudied consisted of ninety-seven teachers and will be referred to as Group A.

The distribution of trait ratings assigned to the teachers in Group A was as follows:

Ratings	No. of times assigned
A (Superior)	306
B (Above average)	530
C (Average)	282
D (Below average)	39
F (Unsatisfactory)	7

The total number of ratings assigned on the twelve traits was 1164, and of this number 46, or 4 percent, were unsatisfactory or below average. When these ratings are considered in relation to the below average grades assigned to the entire 220 teachers, these ninety-seven teachers received 46, or 77. 9 percent, of the total 59 such grades assigned.

The means and the ranks of the means for these Group A teachers are given in Table II. In every case the means are lower for this group than for the total group of 220 teachers. The ranks are almost identical, the major exception being the shift between Knowledge of Subject Matter and Interest in School Activities.

In Table III are given the means and ranks of means for the initial trait ratings of the 123 teachers who were re-rated in 1949. These teachers will be referred to as Group B. The means for this group are higher in every case than for the total group and also, therefore, for the Group A in Table II. Again, however, the ranks of the means remain almost identical with the ranks for the total group or the group of ninety-seven, with the major difference being in Knowledge of Subject Matter and Interest in School Activities again. It may be significant to note that these teachers are ranked relatively higher on Interest in School Activities than in Knowledge of Subject Matter as contrasted to the ninety-seven. This raises the question as to whether the teachers' interest in school activities is more discernible to the superintendent than some of the other traits and whether the teachers who are going to stay in the profession longer really exhibit more of such interest from the beginning than do teachers who are soon to drop out. The converse of this, that the teachers who are to continue possess less knowledge of subject matter than those who are soon to drop out, does not hold, however. Though the Group B teachers received a lower rank on Knowledge of Subject Matter, the mean of their ratings on this trait was higher than the mean on this trait for Group A, indicating higher ratings actually, but a difference in relationship to the other traits.

Analyses of Rating Two

The means and rank of means for the second rating of the Group B teachers made in December, 1949, are given in Table IV. As a group these teachers have gained in mean score on seven items on the scale, lost on four, and maintained the same mean on one item. Since the differences in means are quite small, perhaps an inspection of the changes occurring in the ranks is more meaningful. Item 1, Cooperation and Loyalty, and Item 3, Courtesy and Friendliness, have consistently maintained rank 1 and 2, respectively. Perhaps two of the most interesting changes are those with respect to Interest in School Activities and Discipline. Apparently, as

TABLE I

MEANS OF TRAIT RATINGS ON FORM 6A BLANK AND RANK OF MEANS FOR TOTAL GROUP OF TEACHERS
(N = 220)

Trait No.	Trait Name	Mean	Rank
1	Cooperation and Loyalty	4.3636	1
2	Knowledge of Subject Matter	3.9636	8.5
3	Courtesy and Friendliness	4.2864	2
4	Interest in School Activities	4.0409	6
5	Discipline	3.8091	12
6	Emotional Poise	4.0227	7
7	General Culture	3.9636	8.5
8	Health and Vitality	4.1682	4
9	Personal Appearance	4.1000	5
10	Resourcefulness	3.8727	11
11	Response to Criticism	4.1909	3
12	Speech	3.9000	10

TABLE II

MEANS OF TRAIT RATINGS ON FORM 6A BLANK AND RANK OF MEANS FOR THOSE WHO DROPPED OUT OF TEACHING BY 1949
(Group A, N = 97)

Trait No.	Trait Name	Mean	Rank
1	Cooperation and Loyalty	4.2371	1
2	Knowledge of Subject Matter	3.9381	6
3	Courtesy and Friendliness	4.0928	2
4	Interest in School Activities	3.8351	9
5	Discipline	3.6495	12
6	Emotional Poise	3.9072	7
7	General Culture	3.8866	8
8	Health and Vitality	4.0515	4
9	Personal Appearance	4.0103	5
10	Resourcefulness	3.7938	11
11	Response to Criticism	4.0619	3
12	Speech	3.7629	10

TABLE III

MEANS OF TRAIT RATINGS ON FORM 6A BLANK AND RANK OF MEANS FOR RATING ONE OF THOSE FOLLOWED UP IN 1949
(Group B, N = 123)

Trait No.	Trait Name	Mean	Rank
1	Cooperation and Loyalty	4.4634	1
2	Knowledge of Subject Matter	3.9837	10
3	Courtesy and Friendliness	4.4390	2
4	Interest in School Activities	4.2033	5
5	Discipline	3.9350	11.5
6	Emotional Poise	4.1138	7
7	General Culture	4.0244	8
8	Health and Vitality	4.2602	4
9	Personal Appearance	4.1707	6
10	Resourcefulness	3.9350	11.5
11	Response to Criticism	4.2927	3
12	Speech	4.0081	9

TABLE IV

MEANS OF TRAIT RATINGS ON FORM 6A BLANK AND RANK OF MEANS FOR THOSE WHO DROPPED OUT OF TEACHING BY 1949-1950*
(Group A, N = 97)

Trait No.	Trait Name	Mean	Rank	Correlation with First Rating
1	Cooperation and Loyalty	4.5203	1	.20
2	Knowledge of Subject Matter	4.1138	8	.08
3	Courtesy and Friendliness	4.3415	2	.33
4	Interest in School Activities	4.1057	9	.07
5	Discipline	4.1220	7	.25
6	Emotional Poise	4.1951	5	.24
7	General Culture	4.0488	10	.36
8	Health and Vitality	4.2846	3	.20
9	Personal Appearance	4.1707	6	.34
10	Resourcefulness	3.9919	11	.30
11	Response to Criticism	4.2764	4	.24
12	Speech	3.9837	10	.21

* Correlations with the first rating have been included in the final column.

TABLE V

MEANS OF TRAIT RATINGS, RANK OF MEANS, AND CORRELATIONS BETWEEN RATINGS ONE AND TWO ON FORM 6A BLANK FOR TEACHERS RATED BY THE SAME RATER BOTH TIMES
(Sub-Group B1, N = 59)

Trait No.	Trait Name	Mean Rating 1	Rank	Mean Rating 2	Rank	Correlation between Rating 1, 2
1	Cooperation and Loyalty	4.3729	2	4.6102	1	.47
2	Knowledge of Subject Matter	3.9322	10	4.1186	10	.37
3	Courtesy and Friendliness	4.4237	1	4.4068	2	.57
4	Interest in School Activities	4.1695	6	4.1525	7.5	.35
5	Discipline	3.7627	12	4.1525	7.5	.57
6	Emotional Poise	4.0678	7	4.2373	6	.42
7	General Culture	4.0339	8	4.1356	9	.53
8	Health and Vitality	4.3220	4	4.3898	3	.44
9	Personal Appearance	4.3390	3	4.2542	5	.52
10	Resourcefulness	3.8983	11	3.9661	12	.57
11	Response to Criticism	4.2881	5	4.3220	4	.44
12	Speech	4.0169	9	4.0508	11	.37

TABLE VI

MEANS OF TRAIT RATINGS, RANK OF MEANS, AND CORRELATIONS BETWEEN RATINGS ONE AND TWO ON FORM 6A BLANK WHEN THERE WERE DIFFERENT RATERS

(Sub-Group B2, N = 64)

Trait No.	Trait Name	Mean Rating 1	Rank	Mean Rating 2	Rank	Correlation between Rating 1, 2
1	Cooperation and Loyalty	4.5469	1	4.4375	1	.02
2	Knowledge of Subject Matter	4.0313	8	4.1094	6	-.15
3	Courtesy and Friendliness	4.4531	2	4.2813	3	.13
4	Interest in School Activities	4.2344	4	4.0625	9	-.14
5	Discipline	4.0938	7	4.0938	7.5	-.02
6	Emotional Poise	4.1563	6	4.1563	5	.11
7	General Culture	4.0156	9.5	3.9688	11	.04
8	Health and Vitality	4.2031	5	4.1875	4	-.01
9	Personal Appearance	4.0156	9.5	4.0938	7.5	.17
10	Resourcefulness	3.9688	12	4.0156	10	.04
11	Response to Criticism	4.2969	3	4.2344	2	.11
12	Speech	4.0000	11	3.9219	12	.12

TABLE VII

FIRST AND SECOND RATINGS ON FORM 6A BLANK FOR THE 1946 GRADUATES
(TWO AND ONE-HALF YEARS BETWEEN THE RATINGS)
(N = 22)

Trait No.	Trait Name	Mean Rating 1	Rank	Mean Rating 2	Rank
1	Cooperation and Loyalty	4.2727	2	4.4091	1
2	Knowledge of Subject Matter	3.9545	10.5	4.0455	8
3	Courtesy and Friendliness	4.5455	1	4.2273	2.5
4	Interest in School Activities	4.0909	5.5	4.1364	4.5
5	Discipline	3.9545	10.5	4.0909	6
6	Emotional Poise	4.0909	5.5	4.1364	4.5
7	General Culture	4.0455	8	3.9545	10.5
8	Health and Vitality	4.0909	5.5	4.0455	8
9	Personal Appearance	4.0909	5.5	3.8636	12
10	Resourcefulness	4.0000	9	4.0455	8
11	Response to Criticism	4.2273	3	4.2273	2.5
12	Speech	3.8636	12	3.9545	10.5

a group, these teachers seemed less interested in school activities in December, 1949, than they did at the end of their first year of teaching, for they not only received a lower mean score but also a lower rank for this item. On the other hand, apparently they are improving in their disciplinary abilities, receiving a slightly higher mean and a higher rank.

The Product-Moment coefficients of correlation between ratings one and two for Group B are shown in Table IV also. The standard error for a zero correlation for a random sample of 123 cases is .09, and a coefficient of .18 is necessary for the correlation to be significantly different from zero. Were these random samples six of the correlations in Table IV, they might be considered significantly different from zero at the 5 percent level and four more at the 1 percent level. Since there are so many variables which may effect the sizes of these correlations, actually little interpretation can be put upon them, however, except that they represent the observed relationship for the total group of teachers.

Some of the teachers in Group B were rated by the same superintendent both times and others were rated by a different superintendent the second time. The means, the ranks, and the correlation between the two ratings for those teachers rated by the same rater both times are shown in Table V. This group will be referred to as sub-group B1. In all cases but one the means for the second rating are higher than the corresponding means for the total group. The ranks are not identical with those of the total group but the differences are not marked. The biggest differences between their two ratings is their improvement in Discipline and in Cooperation and Loyalty. The correlations between the two ratings are considerably higher for this sub-group. The standard error of a zero correlation for a random sample when N = 59 is .13. Were these considered as random samples, all of these correlations are significantly different from zero at the 1 percent level. In this case, one variable has been removed, i.e., the raters are the same, but the raters' philosophies as well as the teachers' behaviors may have changed in the time elapsing between the ratings.

When the information in Table VI relative to the 64 teachers who were rated by different superintendents at the two ratings, to be referred to as sub-group B2, is compared with the data in Table V, several items of interest are noted. This group seems to have been rated higher on their first rating on eight out of twelve traits. The differences in the rankings on Discipline and Personal Appearance are quite marked, Sub-Group B2 being ranked considerably higher than Sub-Group B1 on Discipline, and considerably lower on Personal Appearance. The differences in means and ranks in favor of the group which changed raters raises the question as to the possibility that perhaps the better teachers were the ones who changed positions. If so, it appears that the change may not have been to their advantage in the long run.

When the second ratings for the two groups are compared the situation as to size of mean is reversed. For eleven out of the twelve traits Sub-Group B1 received a higher mean rating the second time than did Sub-Group B2. The overall mean rating assigned to Sub-Group B1 was higher the second time, whereas for Sub-Group B2 it was lower the second time than the first time. The biggest discrepancy in rank of means between the second ratings of the two groups was in Knowledge of Subject Matter. Comparatively Sub-Group B2 received a higher rank on this trait than did Sub-Group B1. Other differences in rank tended to diminish.

When Table VI is examined for similarities and differences in the two ratings for the teachers rated by a different superintendent the second time, it is noted that as a group the teachers lost ground in changing positions. Their overall mean rating is lower the second time than it was the first time. In only three traits did they receive a higher mean rating the second time, in contrast to the preceding group who received higher mean ratings in all but three when rerated by the same supervision. The biggest difference in rank is with respect to Interest in School Activities, which dropped from fourth to ninth place in comparative size of mean.

The coefficients of correlation shown in Table VI reveal very little relationship between the two sets of ratings when the teachers have changed positions. The standard error of a zero correlation for a random sample of 64 cases is .13. Since the coefficient then must be .26 to be significantly different from zero at the 5 percent level of confidence, none of the correlations obtained are significant at this level were these considered random samples. Such lack of relationship may arise from several sources. Either the superintendents doing the ratings did not agree on the degree of Knowledge of Subject Matter possessed by the teacher, her ability in Discipline, her state of Health, etc.; the teachers actually changed that much in the new situation; or both of the preceding possibilities may be operating in combination.

The 123 teachers composing Group B may also be sub-divided into three groups on the basis of the years of teaching experience. The amount of experience prior to the first rating is constant for all teachers since they were rated at the end of their first year of teaching. For those who graduated in 1946, this first rating was in June, 1947; for the 1947 graduates the rating was in June 1948; and for the 1948 graduates it was in June 1949. However, since the second rating

TABLE VIII

FIRST AND SECOND RATINGS ON FORM 6A BLANK FOR THE 1947 GRADUATES (ONE AND ONE-HALF YEARS BETWEEN THE RATINGS) (N = 38)

Trait No.	Trait Name	Mean Rating 1	Rank	Mean Rating 2	Rank
1	Cooperation and Loyalty	4.6316	1	4.4211	1
2	Knowledge of Subject Matter	4.0526	8	4.0789	8
3	Courtesy and Friendliness	4.4211	2	4.2632	3.5
4	Interest in School Activities	4.2632	5	3.9737	10
5	Discipline	3.9737	11.5	4.2368	5
6	Emotional Poise	4.2105	6	4.2632	3.5
7	General Culture	3.9737	11.5	3.9211	11
8	Health and Vitality	4.3684	3.5	4.3947	2
9	Personal Appearance	4.1053	7	4.1842	7
10	Resourcefulness	4.0000	10	4.0263	9
11	Response to Criticism	4.3684	3.5	4.2105	6
12	Speech	4.0263	9	3.8684	12

TABLE IX

FIRST AND SECOND RATINGS ON FORM 6A BLANK FOR THE 1948 GRADUATES (ONE-HALF YEAR BETWEEN THE RATINGS) (N = 63)

Trait No.	Trait Name	Mean Rating 1	Rank	Mean Rating 2	Rank
1	Cooperation and Loyalty	4.4286	1	4.6190	1
2	Knowledge of Subject Matter	3.9524	10	4.1587	8.5
3.	Courtesy and Friendliness	4.4127	2	4.4286	2
4	Interest in School Activities	4.2063	6	4.1746	6.5
5	Discipline	3.9048	11	4.0635	10.5
6	Emotional Poise	4.0635	7	4.1746	6.5
7	General Culture	4.0476	8.5	4.1587	8.5
8	Health and Vitality	4.2540	4	4.3016	4
9	Personal Appearance	4.2381	5	4.2698	5
10	Resourcefulness	3.8730	12	3.9524	12
11	Response to Criticism	4.2698	3	4.3333	3
12	Speech	4.0476	8.5	4.0635	10.5

TABLE X

MEANS AND RANKINGS OF MEANS OF RATINGS ONE, TWO, AND THREE ON FORM 6A BLANK FOR TOTAL GROUP C
(N = 61)

Trait No.	Trait Name	Mean Rating 1	Rank	Mean Rating 2	Rank	Mean Rating 3	Rank
1	Cooperation and Loyalty	4.4099	2	4.6393	1	4.1803	2.5
2	Knowledge of Subject Matter	3.9016	10	4.1475	8	3.9344	9
3	Courtesy and Friendliness	4.4754	1	4.4754	2	4.3115	1
4	Interest in School Activities	4.1639	5.5	4.2295	6.5	4.0328	7
5	Discipline	3.8197	12	4.1148	9	4.1311	5.5
6	Emotional Poise	4.0492	7	4.2295	6.5	4.1803	2.5
7.	General Culture	3.9180	9	4.0820	10	3.9180	12
8	Health and Vitality	4.1639	5.5	4.3443	4	4.1475	4
9	Personal Appearance	4.2623	4	4.2951	5	4.1311	5.5
10	Resourcefulness	3.8525	11	4.0164	12	4.0000	8
11	Response to Criticism	4.3279	3	4.3607	3	3.9836	10
12	Speech	3.9508	8	4.0326	11	3.9344	11

TABLE XI

MEANS AND RANK OF MEANS OF RATINGS ONE, TWO, AND THREE ON FORM 6A BLANK GIVEN BY THE SAME RATERS
(N = 19)

Trait No.	Trait Name	Mean Rating 1	Rank	Mean Rating 2	Rank	Mean Rating 3	Rank
1	Cooperation and Loyalty	4.6842	1	4.7368	1	4.2632	2
2	Knowledge of Subject Matter	3.6842	10	4.0526	10	3.8421	10
3	Courtesy and Friendliness	4.5263	2	4.4737	4	4.3158	1
4	Interest in School Activities	4.2105	5	4.3158	7	3.8947	8
5	Discipline	3.5263	11.5	3.9474	11	3.9474	6.5
6	Emotional Poise	3.9474	7	4.5789	3	4.0526	4
7	General Culture	3.8947	8	4.1579	8.5	3.8421	10
8	Health and Vitality	4.1053	6	4.3684	5.5	4.0000	5
9	Personal Appearance	4.3684	4	4.3684	5.5	4.1053	3
10	Resourcefulness	3.5263	11.5	3.7895	12	3.9474	6.5
11	Response to Criticism	4.4737	3	4.5263	2	3.7895	12
12	Speech	3.8421	9	4.1579	8.5	3.8421	10

was obtained on all of them at one time, i. e., December 1949, the amount of teaching experience between the two ratings varied for the three groups. The 1946 graduates had had a total of three and one-half years of teaching experience at the time of the second rating, with two and one-half years between the two ratings. The 1947 graduates had been teaching two and one-half years at the time of the second rating, with one and one-half years between the two ratings. The 1948 graduates had had only one and one-half years of teaching experience when they were rated the second time, the second rating being made only one-half year after the first rating. In Tables VII, VIII, and IX are shown the means and ranks for the two ratings for these three groups of teachers.

As a group the 123 teachers made a slight gain in over-all mean rating for the second rating, but this evidently is largely the influence of the sixty-three graduates of 1948, for the 1946 and 1947 graduates lost slightly in over-all mean. Since the two ratings came so close together (one-half year apart) for the 1948 graduates and a larger percentage of them were rated by the same rater both times, this is in line with the findings previously reported for gains and losses with same and different raters.

It is again of interest to note the shift in rank of the trait Discipline for the three groups. The trend toward a higher mean rating for the more experienced teachers is evidenced again, and though there is a slight gain in mean for the 1948 graduates, there is little change in the rank of this trait. Cooperation and Loyalty continues to rank at the top for all three groups, and Knowledge of Subject Matter continues to be rather far down the scale of ranks. The considerable shift downward in Health and Vitality and Personal Appearance both in rank and in loss in actual mean rating for the 1946 graduates is rather out of line with the analyses of other sub-groupings. One might wonder whether or not the more experienced teacher has found that it pays to stay home when she is ill and is secure enough by now not to fear revealing this weakness, if it may be called such, to her superintendent. On the other hand, though there is no actual evidence on this point and it is purely conjecture on the part of the investigator, the first-year teacher may come to school when she is actually ill through fear of losing her job if she is absent to any great extent. It seems reasonable that the frequency of the teacher's absences from school due to illness might be part of the basis for the superintendent's rating on her health.

Analyses of Rating Three

In December of 1950 a third rating was obtained for sixty-one of the teachers for whom the second ratings had been obtained in 1949. In Table X are given the comparisons of the three ratings for this group of teachers, to be referred to as Group C. When looking at this table it must be remembered that the time lapse between ratings one and two varies for members of the group but that rating three was made one year after rating two for all and thus time span is constant. Though the over-all mean took a slight upward trend at the second rating, it dipped again at the third rating to show a slight net loss. The fact that the superintendents made rating one for the Placement Bureau and rating three for confidential research purposes might account for this loss if it were not for the fact that rating two was also made for research purposes and it registered a gain over rating one.

The same two items, Cooperation and Loyalty, and Courtesy and Friendliness, continue to occupy the two top ranks with Emotional Poise tying for second rank in the third rating. Though the superintendents continue to mark their teachers tops in Cooperation and Courtesy, they give lower ratings on Response to Criticism at the time of the third rating. The upward trend previously noted in Discipline and Emotional Poise and the downward trend of Interest in School Activities is continued in rating three. The teachers have made a slight over-all gain in mean rating on Resourcefulness also as they gained experience and this trait moves up from eleventh to eighth in rank.

In Table V it was shown that the fifty-nine teachers who were given both ratings one and two by the same superintendent made a slight over-all gain in mean rating. However, this situation does not continue to hold true for the nineteen teachers who were rated still a third time by their same superintendent. Their ratings are summarized in Table XI. Their over-all mean for rating three is even lower than that of the total group and lower than their own over-all means for ratings one or two. The general upward and downward trends of specific traits is essentially the same for this smaller group as for the larger Group C and in general the rankings are quite similar. It is of interest to note that the smaller group received a considerably lower mean and rank on Response to Criticism for the third rating than for either of the other two. An inspection of all the previous analyses reveals more similarity in the means for Cooperation and Loyalty and Response to Criticism than is shown here. The various means for Cooperation and Loyalty, in every case, have been larger than the means for Response to Criticism, but the differences between the two items have been smaller than for this particular group. Though the means for both of these traits have decreased since the first rating for this group, the question of the cause for the unproportional

TABLE XII

CORRELATIONS BETWEEN RATINGS ONE AND TWO, ONE AND THREE, AND TWO AND THREE ON FORM 6A BLANK FOR GROUP C
(N = 61)

Trait No.	Trait Name	Correlation between Rating 1 and 2	Correlation between Rating 1 and 3	Correlation between Rating 2 and 3
1	Cooperation and Loyalty	.28	.33	.18
2	Knowledge of Subject Matter	.35	.27	.28
3	Courtesy and Friendliness	.26	.39	.29
4	Interest in School Activities	.25	.36	.41
5	Discipline	.45	.28	.51
6	Emotional Poise	.26	.22	.35
7	General Culture	.24	.38	.16
8	Health and Vitality	.38	.26	.35
9	Personal Appearance	.43	.26	.31
10	Resourcefulness	.44	.26	.32
11	Response to Criticism	.37	.27	.15
12	Speech	.37	.25	.31

TABLE XIII

MEANS OF TRAIT RATINGS ON THE PAIRED-COMPARISON RATING SCALE
(N = 61)

Trait No.	Trait Name	Mean	Rank of the Means
1	Cooperation	9.1639	1
2	Knowledge of Subject Matter	7.1967	8
3	Courtesy	8.2951	3
4	Interest in School Activities	6.4426	10
5	Discipline	6.7213	9
6	Emotional Poise	7.5246	5
7	General Culture	5.5902	13
8	Health	7.2295	7
9	Personal Appearance	8.2131	4
10	Resourcefulness	6.1803	12
11	Response to Criticism	5.1803	14
12	Speech	4.6230	15
13	Loyalty	7.4098	6
14	Friendliness	9.0492	2
15	Vitality	6.2295	11

TABLE XIV

RANK OF MEANS ON THE FORM 6A BLANK AND ON THE PAIRED-COMPARISON INSTRUMENT
(N = 61)

Trait No.	Trait Name	Rank on Form 6A Blank	Rank on Paired-Comp. Instrument
1	Cooperation (and Loyalty)	2.5	1
2	Knowledge of Subject Matter	9	6
3	Courtesy (and Friendliness)	1	2
4	Interest in School Activities	7	8
5	Discipline	5.5	7
6	Emotional Poise	2.5	4
7	General Culture	12	10
8	Health (and Vitality)	4	5
9	Personal Appearance	5.5	3
10	Resourcefulness	8	9
11	Response to Criticism	10	11
12	Speech	11	12

TABLE XV

CORRELATIONS BETWEEN TRAIT RATINGS ON THE PAIRED-COMPARISON INSTRUMENT AND THIRD TRAIT RATINGS ON THE FORM 6A BLANK
(N = 61)

Trait Name		Correlation
On Form 6A Blank	On Paired-Comparison	
Cooperation and Loyalty	Cooperation	.48
Cooperation and Loyalty	Loyalty	.45
Knowledge of Subject Matter	Knowledge of Subject Matter	.32
Courtesy and Friendliness	Courtesy	00
Courtesy and Friendliness	Friendliness	.25
Interest in School Activities	Interest in School Activities	.41
Discipline	Discipline	.51
Emotional Poise	Emotional Poise	.44
General Culture	General Culture	.22
Health and Vitality	Health	.34
Health and Vitality	Vitality	.56
Personal Appearance	Personal Appearance	.34
Resourcefulness	Resourcefulness	.56
Response to Criticism	Response to Criticism	.41
Speech	Speech	.13

decrease for Response to Criticism is raised. A possible hypothesis though perhaps dangerous in that it is attributing causal relationship, is that a teacher's response to criticism influences the superintendent's opinion of her cooperation and loyalty to a certain extent. Therefore, as she responds more unfavorably to criticism, he rates her some lower on Cooperation and Loyalty, but other factors also considered as part of her cooperation and loyalty tend to keep this rating higher than the rating on response to criticism.

In Table XII are presented the coefficients of correlation observed between the ratings for Group C. The relationships are all positive and in general higher than those observed between ratings one and two for Group B. For a random sample of sixty-one cases the standard error of a zero correlation is .13. Were this group considered a random sample a coefficient of .26 would be necessary for the relationship to be significantly different from zero at the 5 percent level, and .34 for the relationship to be significantly different from zero at the 1 percent level. According to that criterion eight of the correlations between ratings one and two are significant at the 5 percent level and seven at the 1 percent level. Nine of the correlations between ratings one and three are significant at the 5 percent level and three at the 1 percent level. For ratings one and three, nine of the correlations are significant at the 5 percent level and four at the 1 percent level.

PART II

Analyses With Relation to Rating Schemes

Analyses of Simultaneous Measurements

In December of 1950, when a third rating on the same blank which had previously been used was obtained, ratings on two other types of instruments also were obtained; namely, the paired-comparison instrument and the general ranking in percent categories. These instruments have been described earlier. Part Two of this study is concerned with the relationships existing between these simultaneous ratings secured on the three different instruments in terms of what they might suggest regarding rating systems or schemes in general.

In Table XIII are the means and the ranks of the means for the traits as they were marked on the paired-comparison instrument. On the original blank Cooperation and Loyalty appeared as one item to receive a single rating, as did Courtesy and Friendliness, and Health and Vitality. On the paired-comparison instrument these three combinations were split up and their components treated as six individual traits in an effort to see to what extent they were measuring the same thing. Therefore, fifteen traits are listed for this instrument.

The coefficient of correlation was computed between Cooperation and Loyalty, Courtesy and Friendliness, and between Health and Vitality. The coefficients obtained were +.418, +.333, and +.735, respectively. It would appear then that the ratings on Health and Vitality are measurements of the same quality to a high degree, to the extent that the measurement is reliable, and that the ratings on Cooperation and Loyalty and on Courtesy and Friendliness represent to a higher degree measurements of different traits—again to the extent that the measurements are reliable.

The reliability estimates, obtained through the use of the Kuder-Richardson formula for these six traits are as follows:

Cooperation	.71
Loyalty	.76
Courtesy	.72
Friendliness	.84
Health	.87
Vitality	.82

It would seem then that though the correlations of +.418 and +.333 are high enough to be significantly different from zero at the 1 percent level for a random sample of sixty-one cases there is considerable specificity in the ratings on Cooperation, Loyalty, Courtesy, and Friendliness. This raises the question as to whether they should be combined as they are on the original blank or whether they actually should be listed as separate traits.

When the means and rankings for these six traits are examined in Table XIII, it is observed that in two cases the superintendents have rated the teachers as a group higher on the first named trait in the combination on the original blank. The mean for Cooperation is higher than that for Loyalty, and the mean for Health exceeds that for Vitality; and consequently the means for Cooperation and Health have higher rankings also than the means for their mates. Though they have tended to order the teachers in the same way on the two traits of each combination to a greater or lesser degree as evidenced by the correlations, they gave higher ratings to the trait named first in each combination on the original blank.

One possible explanation for this is that the first name in these combinations is the more popular word. In line with this reasoning, Courtesy and Friendliness are about equally popular terms as evidenced by their names. They measure two different things fairly reliably, but the superintendents rate teachers as a group, but not as individuals, equally high on both.

Bearing this in mind, then it would seem feasible to consider only the first named trait in each

of the three combinations when making the comparisons of the ranks of the means on the original blank to the ranks of the means on the paired comparison instrument. Since the two instruments employ different scales direct comparisons of means is not meaningful. In Table XIV, are shown the ranks of the means of the traits on the two instruments. The ties on the original blank make comparableness a little more difficult to see, but there is considerable similarity in the two sets of rankings. The same traits tend to hold the top positions and the same ones tend to be rated lowest. Of interest perhaps is the fact that Knowledge of Subject Matter moves farther up the scale than it ever has for this group of teachers.

On the other hand, from Table XV it can be seen that the trait Vitality on the Paired Comparison has a higher correlation with the combination Health and Vitality on the original blank than does the single trait Health. It would appear then that the superintendents have rated the teachers as a group higher on Health than on Vitality, but they have ranked the teachers as individuals with respect to Vitality more nearly like they order them with respect to Health and Vitality on the original blank.

The very nature of the paired-comparison instrument, in that it forces the rater into ranking the traits for an individual, would tend to lower the correlations between some of the trait ratings on that instrument and the ratings on a blank where he could give all A's or B's to the individual. The actual meanings for the coefficients given in Table XV when considered in conjunction with the means and ranks of those means shown in Tables XIII and XIV is not quite clear. The coefficients are in part a function of the uniqueness of the paired-comparison instrument, but apparently something quite different is being measured by the combination Courtesy and Friendliness on the one instrument and the trait named Courtesy on the other, or at least the trait names are operating in a different fashion.

The third type of rating obtained on each teacher in December, 1950, was in terms of which of five specified categories the superintendent placed the teacher with respect to all the teachers he knew. The five categories were Highest 10%, Next Highest 20%, Middle 40%, Next Lowest 20%, and Lowest 10%. The distribution of teachers as they were assigned to categories is as follows:

Highest 10%	14
Next Highest 20%	23
Middle 40%	21
Next Lowest 20%	2
Lowest 10%	1

The correlations between the placement in the category and the trait ratings on the paired-comparison instrument are given in Table XVI. Here it can be seen that some negative correlations between trait rankings and the category rankings have been obtained. These should be examined and considered with a great deal of caution.

TABLE XVI

CORRELATIONS BETWEEN CATEGORY PLACEMENT AND TRAIT RATING ON THE PAIRED-COMPARISON INSTRUMENT
(N = 61)

Trait No.	Trait Name	Correlation
1	Cooperation	.35
2	Knowledge of Subject Matter	.38
3	Courtesy	-.33
4	Interest in School Activities	.20
5	Discipline	.14
6	Emotional Poise	.01
7	General Culture	-.20
8	Health	-.34
9	Personal Appearance	-.24
10	Resourcefulness	.51
11	Response to Criticism	.19
12	Speech	-.20
13	Loyalty	.12
14	Friendliness	-.08
15	Vitality	-.13

Resourcefulness, Knowledge of Subject Matter, and Cooperation as they were marked on the paired-comparison instrument have the highest positive relationship with the category placement. This means that within the limits set by the correlation coefficient the teachers placed in the top 10% category also received high scores on those particular traits on the paired-comparison blank and teachers in the lower categories received lower scores on those traits. Apparently Emotional Poise and Friendliness ratings have little relationship with the general category rating.

The negative coefficients between Health and the general rating and Courtesy and the general rating give rise to some speculation. Ordinarily a high negative correlation would be considered to indicate that two ratings were measuring the same thing to a high degree but in opposite directions. With this peculiar type of instrument, however, negative correlations may be inherent in the measuring device itself. The instrument makes no attempt to get at the amount of the trait possessed or lacked by the individual in

either an absolute sense or with relation to some specified standard, but rather at the relative position of a trait in the individual's own heirarchy of traits. Therefore, instead of a negative correlation indicating that the good teachers actually had poor health and the poor teachers good health, it more probably means that the good teachers, although they possessed acceptably good health, had other traits which impressed their superintendents as being stronger traits in their total make-up.

An examination of the grades assigned to this trait on the original blank tends to bear out this hypothesis. Fifty-two teachers out of the total 61 were marked Above Average or Superior on Health and Vitality, eight were marked Average and only one was given a Below Average rating. This would seem to indicate that the superintendents considered the majority of their teachers to possess sufficiently good health regardless of their general rating. An examination of the mean ranks assigned on the paired comparison also tends to bear out the hypothesis. The mean rank of 5.7 on Health for the teachers placed in the upper 10% means that when Health was paired with every other trait the superintendents marked the other traits as being stronger in many instances. A higher mean rank of 8.4 for the teachers placed in the middle 40% category means that the superintendents more frequently chose Health as the stronger trait in preference to each of the others.

It seems quite plausible from these data that there may be two different systems operating as superintendents rate a teacher on a paired-comparison type of instrument—one for the good teachers and one for the poor teachers. For a good teacher he may be choosing which trait in each pair is really her stronger trait. But for a poor teacher he may be choosing the one which is the least weak. In other words, for a generally all around weak teacher, what are her least weak traits. Therefore, among a set of weak traits in such a teacher, her reasonably good health may stand out quite favorably by comparison.

Another possible hypothesis may be in terms of the superintendent's values as to what traits he thinks are important. As he marks a teacher whom he considers good, he looks for the presence of the traits he thinks most important in any good teacher. In so doing, the traits of lesser importance receive relatively lower rankings. In marking a teacher he considers a poor teacher, he looks for and notes the absence of the important traits in his value system. In this case, then the relatively unimportant traits from his point of view come out on top with the higher rankings. Thus a negative correlation between general merit and certain traits. If we followed this reasoning, we could then look upon the ranking of the traits as an indication of their importance in the value system of the superintendent.

The relationships between the category placement and the third trait ratings, made at the same time that the paired-comparison ratings were made, shown in Table XVII may shed some light on this problem. Here it can be seen that the ratings on Resourcefulness, Knowledge of Subject Matter, and Cooperation and Loyalty along with Discipline this time again have a high positive relationship with the general rating. Bearing in mind that this rating is the A-B-C type of rating and all coefficients could have been high, the lowest correlation being between Health and Vitality is of interest. Low correlations may arise from actual lack of relationship, low reliability, and/or low variance. Since Health is a more matter-of-fact quality, more easily observable than many of the others, and least subject to differing educational philosophies, the hypothesis seems reasonable that the ratings on this trait are perhaps more valid and reliable than the other ratings and that this low correlation is in considerable part a function of their low variance.

TABLE XVII

CORRELATIONS BETWEEN THE CATEGORY PLACEMENT AND THIRD TRAIT RATINGS ON FORM 6A BLANK
(N = 61)

Trait No.	Trait Name	Correlation
1	Cooperation and Loyalty	.66
2	Knowledge of Subject Matter	.63
3	Courtesy and Friendliness	.57
4	Interest in School Activities	.68
5	Discipline	.70
6	Emotional Poise	.60
7	General Culture	.46
8	Health and Vitality	.34
9	Personal Appearance	.55
10	Resourcefulness	.77
11	Response to Criticism	.64
12	Speech	.55

Comparisons between the means on the third trait rating and the category in which the teacher was placed are shown in Table XVIII. The highest mean on every trait for the teachers in the highest category and the steadily decreasing mean as the category becomes lower in interesting to note. The means for the last two categories are scarcely meaningful due to the few cases, but the trend for the other three categories is quite noticeable.

Since a general factor[4] had been found to ac-

4. See the following discussion of the factor analysis.

TABLE XVIII

MEANS FOR THIRD TRAIT RATINGS ON FORM 6A BLANK FOR TEACHERS PLACED IN EACH CATEGORY

Trait No.	Trait Name	Category 5 (N=14)	4 (N=23)	3 (N=21)	2 (N= 2)	1 (N= 1)
1	Cooperation and Loyalty	4.9286	4.2609	3.8095	3.0000	2.0000
2	Knowledge of Subject Matter	4.5714	4.0000	3.5714	3.0000	3.0000
3	Courtesy and Friendliness	4.9286	4.3043	4.0952	3.0000	3.0000
4	Interest in School Activities	4.8571	4.0870	3.6667	2.5000	2.0000
5	Discipline	4.6429	4.5652	3.5714	2.5000	2.0000
6	Emotional Poise	4.6429	4.3478	3.8571	3.5000	2.0000
7	General Culture	4.2857	4.0435	3.6190	3.5000	3.0000
8	Health and Vitality	4.7143	4.0435	3.9048	3.5000	5.0000
9	Personal Appearance	4.7143	4.1304	3.8571	3.5000	3.0000
10	Resourcefulness	4.8571	4.1304	3.4762	3.0000	2.0000
11	Response to Criticism	4.7857	3.9565	3.7143	2.5000	2.0000
12	Speech	4.5000	3.9565	3.7143	2.5000	3.0000

TABLE XIX

DISTRIBUTION OF THIRD TRAIT RATINGS ON FORM 6A BLANK FOR THE TEACHERS PLACED IN THE SEVERAL CATEGORIES (N = 61)

Category	No. of teachers placed in the category	Possible total no. of ratings	A		B		C		D	
			No. of A's assigned	Percent	No. of B's assigned	Percent	No. of C's assigned	Percent	No. of D's assigned	Percent
Highest 10%	14	168	118	70.24	50	29.76	0	.00	0	.00
Next highest 20%	23	276	80	28.99	158	57.25	38	13.76	0	.00
Middle 40%	21	252	24	9.52	141	55.95	84	33.33	3	1.20
Next lowest 20%	2	24	0	0	5	20.83	14	58.34	5	20.83
Lowest 10%	1	12	1	8.33	0	0	5	41.67	6	50.00

TABLE XX

SUMMARY TABLE OF CORRELATIONS BETWEEN THREE SIMULTANEOUS RATINGS
(N = 61)

Trait Name	Correlation between general category rating and 3rd rating on Form 6A	Correlation between paired-comparison and 3rd rating on Form 6A	Correlation between paired-comparison and general category rating
Cooperation (and)	—	.48	.35
Loyalty	.66	.45	.12
Knowledge of Subject Matter	.63	.32	.38
Courtesy (and)	—	.00	-.33
Friendliness	.57	.25	-.08
Interest in School Activities	.68	.41	.20
Discipline	.70	.51	.14
Emotional Poise	.60	.44	.01
General Culture	.46	.22	-.20
Health (and)	—	.34	-.34
Vitality	.34	.56	-.13
Personal Appearance	.55	.34	-.24
Resourcefulness	.77	.56	.51
Response to Criticism	.64	.41	.19
Speech	.55	.13	-.20

TABLE XXI

INTERCORRELATION AND RESIDUAL MATRIX FOR INTIAL GROUPING*
FORM 6A BLANK, FIRST RATING
(N = 220)

	1	2	3	4	5	6	7	8	9	10	11	12
1		000	147	096	-032	-040	-075	-030	-091	-057	184	-085
2	469		-059	-018	025	-032	064	-006	-020	067	-081	071
3	633	388		112	-022	015	-063	-061	-021	-041	126	-118
4	641	484	632		-020	-040	-023	018	-059	-051	052	-059
5	595	510	480	544		109	011	-113	-065	125	-015	015
6	518	481	546	557	685		069	-049	-003	-009	-029	010
7	490	584	476	582	595	688		014	074	-002	-094	034
8	418	407	366	498	350	441	511		148	-017	014	094
9	389	422	436	454	431	522	606	570		006	-046	082
10	521	599	509	567	722	623	639	491	550		-040	-075
11	726	418	642	632	545	564	507	491	464	574		-057
12	408	524	351	468	524	549	580	527	546	583	467	

* Residuals have been placed in the upper triangle, underlined.
Decimal points have been omitted.

count for such a large part of the intercorrelations of the traits on the original blank, it was deemed justifiable to lump all the trait ratings on the third rating without respect to specific traits and compare that distribution with the placement in categories. Those results are given in Table XIX. It is interesting to note that only the top two points on the scale were used for those teachers placed in the highest category and that A is the most characteristic grade assigned. For the teachers placed in the next category, Next Highest 20%, three points on the scale were used and the most characteristic grade is B. Four points on the scale were used for the teachers placed in the middle category and though they also received proportionately more B's than they did other marks, they received more C's than did the teachers in the next highest category. There were too few teachers placed in the two bottom categories to be able to draw any real conclusions, but it seems reasonable to expect that the downward trend of the mode and the increasing percentages of lower marks might continue.

This increasing variance with lowering rank in the category is an interesting phenomenon to note. It would appear that if a teacher is good, she is about equally good in the opinion of her superintendent on all the traits rated. However, the converse of this is not true for some of the poorer teachers also received high scores on some traits but low scores on others.

A summary of the correlations between the three types of ratings obtained at the same time is given in Table XX. These data have been presented in parts of various preceding tables, but the relationships are clearer when the data are compiled into the one table. The successive decrease in correlation is interesting to observe. Apparently the general category rating and the ratings on the Form 6A blank represent much more nearly the same thing than do either of the other two combinations of instruments. The ratings on the paired comparison instrument and the general category rating, on the other hand, seem to represent measurements of something quite different. The very difference in the thing asked for, the ranking within the individual on the one hand and a quantitative indication of general merit on the other, may be the influencing factor. This and other possible explanations for the array of correlations have been discussed at more lenth earlier. This table may serve merely to point up the relationships between the three instruments and to indicate the amount of agreement we might expect to obtain through the administering of any two of them.

Factor Analyses

As a second approach to studying rating schemes or systems factorial analysis was used. After an examination of the matrix of intercorrelations of the first ratings for the original 220 teachers in this study, a general factor was extracted. The intercorrelations are given below the diagonal in Table XXI and the residuals after the general factor had been removed are shown above the diagonal. The trait names have been omitted in this and following tables and variable numbers substituted. In all tables dealing with analyses of ratings on the Form 6A Blank the numbers and corresponding trait names are as follows:

1. Cooperation and Loyalty
2. Knowledge of Subject Matter
3. Courtesy and Friendliness
4. Interest in School Activities
5. Discipline
6. Emotional Poise
7. General Culture
8. Health and Vitality
9. Personal Appearance
10. Resourcefulness
11. Response to Criticism
12. Speech

The loadings on the general factor are given in Table XXII. An inspection of the residuals indicates that the general factor accounts for the intercorrelations of these trait ratings fairly well.

TABLE XXII

CORRELATIONS OF THE TRAITS WITH THE GENERAL FACTOR, FORM 6A BLANK
(N = 220)

Trait Number	Factor Loading
1	.71
2	.66
3	.68
4	.76
5	.74
6	.78
7	.79
8	.63
9	.67
10	.81
11	.76
12	.69

However, when the intercorrelations of the second ratings for the one hundred twenty-three teachers followed up in 1949 were factored (see Tables XXXI, XXXII, XXXIII, XXXIV), it was found that a general factor would not account for them. Therefore it was decided to re-examine the first ratings for this Group (B) and for the ninety-seven (Group A) who had not been followed up, the majority of them having quit teaching. The inter-

TABLE XXIII

INTERCORRELATION AND FINAL RESIDUAL MATRIX* FORM 6A BLANK,
FIRST RATING, GROUP B
(N = 123)

	1	2	3	4	5	6	7	8	9	10	11	12	h^2
1		033	-072	-024	-003	-014	004	053	-055	-029	049	003	640
2	477		-019	055	-059	-033	016	-010	-013	012	-050	037	622
3	532	373		003	013	035	023	-061	050	-004	019	-053	592
4	542	546	569		-029	-033	003	037	039	011	-029	-019	617
5	418	550	373	420		025	-013	-005	003	023	016	-014	602
6	380	572	402	466	606		031	-009	-014	-014	035	-066	618
7	379	623	391	532	560	676		-014	017	-002	-026	-015	690
8	330	302	270	484	256	380	447		-021	-007	001	050	480
9	205	336	353	472	305	407	508	444		032	-045	-017	461
10	504	648	485	582	638	602	621	357	420		-008	008	673
11	677	381	646	597	406	458	412	411	335	525		033	676
12	319	583	245	427	510	504	588	419	385	559	387		534

* Residuals have been given in the upper triangle, underlined.
Decimal points have been omitted. The calculated communalities have been placed in the final column.

TABLE XXIV

CENTROID MATRIX* FORM 6A BLANK
FIRST RATING, GROUP B
(N = 123)

	I	II	III
1	657	-275	-365
2	730	278	-110
3	639	-358	-236
4	753	-222	-027
5	686	325	-161
6	741	255	064
7	775	226	196
8	554	-182	374
9	565	-082	367
10	796	145	-137
11	714	-380	-147
12	666	270	132

* Decimal points have been omitted.

correlations between the trait ratings on the first rating for the Group B teachers were computed and are given below the diagonal in Table XXIII. Thurstone's complete Centroid Method (39:161-170) was used to factor the correlations and the residuals after three centroids had been removed are given in the upper triangle in Table XXIV. The centroids were extended, the plot was made, and a rotation[5] was made from the extended vectors (39:225-230). In addition, radial rotations were made in an attempt to obtain simple structure (39:194-205). The transformation matrix (Λ) is given in Table XXV. The simple axis structure values (Vmatrix) are given in Table XXVI, with the intercorrelations of the related primary factors (Φ) being given at the bottom of this same table.

TABLE XXV

TRANSFORMATION MATRIX, FORM 6A BLANK,
FIRST RATING, GROUP B
(N = 123)

	A	B	C
I	.2865	.3345	.2601
II	-.6800	.9273	.3452
III	-.6750	.1680	.9018

Cooperation and Loyalty, Courtesy and Friendliness, Interest in School Activities, and Response to Criticism all have relatively high correlations with Factor A. All these traits may be thought of as exppessing the teacher's attitude toward the school and administrat on, her Professional Mindedness, so to speak. With high correlations on Factor B are Knowledge of Subject Matter, Discipline, Emotional Poise, General Culture, Resourcefulness, and Speech. These seem to describe more the teacher's behavior within the classroom and this factor has been identified as Technical Competencies. The two traits with the largest correlations with Factor C are Health and Vitality and Personal Appearance. This factor has been interpreted as Physical Attributes.

The intercorrelations between the trait ratings for the ninety-seven teachers (Group A) who were not rerated in 1949 are given below the diagonal in Table XXVII. These correlations were factored by the same procedure used for the ratings of the Group B teachers and three centroids were removed. The final residuals are given in the upper triangle in Table XXVII. The centroids given in Table XXVIII were extended, the plot was made, and the centroids rotated according to Thurstone's procedure. The transformation matrix (Λ) is given in Table XXIX, the simple axis structure values (the Vmatrix) and the intercorrelations of the related primary factors (Φ) are given in Table XXX.

TABLE XXVI

STRUCTURE VALUES*, FORM 6A BLANK,
FIRST RATING, GROUP B
(N = 123)

	A	B	C
1	62	03	-06
2	09	52	-01
3	59	-08	08
4	39	05	25
5	08	56	-08
6	00	47	16
7	-06	44	30
8	03	-05	54
9	-03	05	51
10	22	42	03
11	56	-09	18
12	-08	45	20
A	100		
B	61	100	
C	55	59	100

*Decimal points have been omitted. The intercorrelations of the related primary factors have been given in the bottom three rows.

5. The rotations for all the factor analyses in this study were made by Dr. Dorothy Knoell, Associate in Research, University of Wisconsin.

TABLE XXVII

INTERCORRELATION AND FINAL RESIDUAL MATRIX*
FORM 6A BLANK, FIRST RATING, GROUP A
(N = 97)

	1	2	3	4	5	6	7	8	9	10	11	12	h^2
1		-003	004	-008	-026	-001	-002	-021	037	-022	038	012	773
2	467		002	-003	055	-025	027	-039	-048	031	-027	-041	486
3	696	411		-002	-038	037	-009	-005	040	-010	-050	-016	640
4	699	440	648		025	-009	044	020	-066	-009	-039	017	663
5	536	478	536	615		-011	-034	-035	-050	097	018	-035	752
6	588	415	629	599	732		040	008	018	-057	-011	013	737
7	569	548	533	615	615	694		-023	037	-036	-038	-042	658
8	472	523	416	483	407	472	557		025	008	033	017	660
9	525	512	488	422	521	596	681	673		-027	023	033	693
10	523	556	515	546	786	632	648	597	651		-004	-044	724
11	764	461	621	648	658	645	588	551	575	613		011	720
12	454	469	397	464	512	567	562	606	676	594	520		599

* The residuals are given in the upper triangle, underlined.
Decimal points have been omitted. The computed communalities have been given in a final column.

The factors obtained for these ratings bear some similarity to the factors obtained for the Group B teachers, and in some respects they are different. The Y factor seems to be very similar to the previous A factor with the exception that Resourcefulness has no significant correlation with Y, whereas it did have a correlation of .22 with A. The other factors are more difficult to interpret. On the Z factor appear some of the traits previously included on Technical Competencies, but Knowledge of Subject Matter and Speech are now correlated with the X factor with Health and Personal Appearance. Though the differences are not distinct, there is some indication that perhaps these two groups of teachers do come from different populations as far as the structure patterns of their ratings are concerned.

TABLE XXVIII

CENTROID MATRIX*, FORM 6A BLANK, FIRST RATING, GROUP A
(N = 97)

	I	II	III
1	775	313	273
2	641	-223	159
3	723	324	112
4	755	277	129
5	789	135	-133
6	802	134	-275
7	802	-088	-084
8	706	-357	203
9	768	-321	-025
10	818	-140	-188
11	814	220	095
12	713	-291	-075

* Decimal points have been omitted.

TABLE XXIX

TRANSFORMATION MATRIX, FORM 6A BLANK, FIRST RATING, GROUP A
(N = 97)

	X	Y	Z
I	.2981	.3179	.3043
II	-.8769	.7224	.0570
III	.3771	.6141	-.9509

The intercorrelations between the second ratings for Group B teachers were computed (Table XXXI) and factored by the same procedures as had been employed previously. The solution for these ratings is given in Tables XXXII, XXXIII, and XXXIV. Again, Factor F seems to be rather clearly the Professional Mindedness identified in Factor A and Factor Y of preceding solutions. Factor E bears considerable similarity to Factor B but appears to be much more a general factor with eight of the twelve traits having substantial correlations with it. The more or less professional abilities such as her knowledge of subject matter and her resourcefulness seem to be combined with her personal qualities such as health, appearance, culture, and poise. Since these personal qualities do have some effect upon her total value as a professional person; this factor may be regarded as the general professional quality, technical, physical, and emotional, of the teacher.

TABLE XXX

SIMPLE AXIS STRUCTURE VALUES* FORM 6A BLANK, FIRST RATING, GROUP A
(N = 97)

	X	Y	Z
1	06	64	-01
2	45	14	03
3	-03	53	13
4	03	52	12
5	-01	14	56
6	02	18	51
7	29	14	32
8	59	10	00
9	50	00	24
10	30	04	42
11	09	48	17
12	44	-03	27
X	100		
Y	53	100	
Z	53	60	100

* The intercorrelations of the related primary axes have been added in the final three rows. Decimal points have been omitted.

There seems to be really no logical explanation for the combination of traits which correlate with Factor D. This factor seems to be very similar to Factor E with its emotional aspect removed. The teacher's emotional make-up may be thought of quite reasonably in terms of her response to criticism, her poise, her health, and her disciplinary abilities. This emotional side seems to be no part of Factor D. Aside from that, Factor D seems to be a combination of technical competencies, such as knowledge of subject matter and speech, and personal characteristics such

TABLE XXXI

INTERCORRELATION AND FINAL RESIDUAL MATRIX*
FORM 6A BLANK, SECOND RATING, GROUP B
(N = 123)

	1	2	3	4	5	6	7	8	9	10	11	12	h^2
1		037	011	070	079	-053	-052	007	035	-053	-023	-039	634
2	268		-033	-026	013	-003	019	-024	-004	-022	012	011	565
3	548	327		019	-060	038	013	021	023	-005	-018	-019	528
4	606	375	541		035	-094	-027	016	-003	097	-047	-054	562
5	273	413	246	271		-006	-006	-017	-070	073	-011	-045	503
6	262	448	452	242	554		015	-028	055	-007	073	034	642
7	317	655	506	482	504	608		000	-031	008	027	035	752
8	304	315	373	327	359	418	447		063	-022	-010	-032	326
9	315	454	385	383	267	452	506	371		-039	-109	049	388
10	200	529	382	470	578	561	662	384	416		016	-055	598
11	619	342	576	515	318	531	518	379	249	400		100	690
12	424	515	487	493	285	455	644	324	501	428	624		580

* Residuals have been given in the upper triangle, underlined, and decimal points have been omitted. Computed communalities have been added in the final column.

as appearance and general culture.

The intercorrelations of the ratings for the sixty-one teachers obtained in 1950 were computed and factored as had been done previously, with the exception that the general category rating obtained at the same time was included as an additional variable, number 16. The intercorrelations of these ratings and the solution are given in Tables XXXV, XXXVI, XXXVII, and XXXVIII. Factor H seems to be quite definitely some sort of a general professional factor in this case, for ten out of the twelve items bear substantial correlations with it. The previously identified Professional Mindedness and Professional Competencies factors apparently have been merged in this general factor. A similarity to the Physical Attribute Factor is seen in Factor J, but the sizeable correlation of Resourcefulness with it is unexplainable. Factor G, in this instance, seems to be the personal impression the teacher makes—her courteousness, poise, culture, appearance, and speech—apart from the professional aspects of these same traits. These same traits also have correlations with the Factor H which has been identified as a general professional impression, but their correlations with Factor G seem to indicate that this factor is the personal side of the teacher as it is separated from her professional side.

TABLE XXXII

CENTROID MATRIX*, FORM 6A BLANK, SECOND RATING, GROUP B
(N = 123)

	I	II	III
	I		
1	597	-512	126
2	655	245	-275
3	673	-269	053
4	662	-314	-160
5	575	347	227
6	702	272	275
7	827	205	-161
8	546	087	142
9	591	102	-167
10	704	317	-042
11	721	-367	188
12	724	-112	-207

* Decimal points have been omitted.

TABLE XXXIII

TRANSFORMATION MATRIX, FORM 6A BLANK, SECOND RATING, GROUP B
(N = 123)

	D	E	F
I	.3025	.4652	.4187
II	.1229	.6645	-.8722
III	-.9452	.5848	.2529

TABLE XXXIV

SIMPLE AXIS STRUCTURE VALUES*, FORM 6A BLANK, SECOND RATING, GROUP B
(N = 123)

	D	E	F
1	00	01	73
2	49	31	-01
3	12	16	53
4	31	01	51
5	00	63	00
6	-01	67	13
7	43	43	13
8	04	40	19
9	35	24	12
10	29	51	01
11	00	20	67
12	40	14	35
D	100		
E	40	100	
F	33	34	100

* Decimal points have been omitted. Intercorrelations between the related primary axes have been added in the final three rows.

The intercorrelations of the trait scores received on the paired-comparison instrument plus the general category rating were computed and are given in the lower triangle in Table XXXIX. In the succeeding tables the variable numbers signify the traits as follows:

1. Cooperation
2. Knowledge of Subject Matter
3. Courtesy
4. Interest in School Activities
5. Discipline
6. Emotional Poise
7. General Culture
8. Health
9. Personal Appearance
10. Resourcefulness
11. Response to Criticism
12. Speech
13. Loyalty

TABLE XXXV

INTERCORRELATION AND FINAL RESIDUAL MATRIX*
FORM 6A BLANK, THIRD RATING, GROUP C
(N = 61)

	1	2	3	4	5	6	7	8	9	10	11	12	16	h^2
1		-036	048	006	-070	-051	026	008	044	014	-052	-069	002	725
2	644		039	062	-040	-078	008	-020	005	006	-005	027	-017	646
3	688	656		029	-056	-058	-037	-094	069	034	020	010	-017	634
4	722	749	687		-070	-040	007	061	-025	-042	-006	030	-023	736
5	537	537	479	546		145	002	-036	-074	030	-039	-021	098	524
6	609	554	585	634	696		036	046	028	-014	-003	-056	-006	653
7	501	485	527	522	389	595		004	-026	-044	-026	049	034	620
8	240	230	105	352	219	251	101		-006	-062	041	061	-041	302
9	468	458	570	486	322	521	492	277		053	-023	-033	024	588
10	659	647	640	661	619	602	425	328	625		019	-026	033	743
11	760	680	681	731	575	672	501	348	515	735		032	-068	741
12	479	583	600	640	462	535	617	323	548	595	657		-031	618
16	660	628	574	680	695	599	458	343	547	766	643	554		732

* Residuals have been given in the upper triangle, underlined, and decimal points have been omitted. Computed communalities have been added in a final column.

14. Friendliness
15. Vitality
16. General Category

The correlations between variable 8 (Health) and variable 15 (Vitality) was found to be +. 735 a value considerably larger than the correlations of either of those traits with any of the other traits. It was decided, therefore, to omit variable 15 from the intercorrelation matrix since the two traits seemed to measure the same thing to such a great extent and their correlation probably would add another factor, a doublet made up of the two traits, to the final solution.

TABLE XXXVI

CENTROID MATRIX*, FORM 6A BLANK THIRD RATING, GROUP C (N = 61)

	I	II	III
1	802	140	250
2	784	093	151
3	773	-120	147
4	848	089	096
5	699	162	094
6	785	-088	169
7	645	-444	081
8	360	222	-351
9	663	-255	-288
10	836	127	-173
11	857	067	047
12	752	-204	-103
16	820	214	-119

* Decimal points have been omitted.

The sums of some of the columns of the intercorrelation matrix were negative, and variables 3, 6, 7, 8, 9, 12, and 14 had to be reflected before the matrix could be factored by the centroid method. This did not yield an all positive matrix, but did give positive sums for all columns. This reflection of the seven variables meant seven negative values on the first centroid.

The correlation matrix was factored by the centroid method previously used, the six centroids were extended, and the plots were made. A direct rotation (20) was made by taking the centroid values of variables 2, 4, 6, 8, 11, and 16 as direction numbers, normalizing them to secure the T matrix. It was decided to keep variable 16 as the general factor and to set variables 2, 4, 6, 8, and 11 orthogonal to it. New direction cosines were computed for these five variables and the V matrix (Table XLII) was then obtained by post-multiplying the centroid matrix (Table XL) by $T\Phi^{-1}$, normalized, (the Λ matrix, Table XLI) where $\Phi = T'T$, (Table XLII). Additional radial rotations did not result in a matrix where all entries were either positive or zero, which is usually the desired solution. The obtained matrix (Table XLII) is a good one in that nearly half of the entries in each column are zero, with the exception of the G_2 column. However, since the obtained V matrix does contain a large number of negative entries it is difficult if not impossible, to interpret. It may be of some interest to note that the G_2 column is very similar to the 16 column in the original correlation matrix.

TABLE XXXVII

TRANSFORMATION MATRIX, FORM 6A BLANK, THIRD RATING, GROUP C (N = 61)

	G	H	J
I	.2477	.4864	.2638
II	-.9173	.4092	.2073
III	-.3119	.7720	-.9420

TABLE XXXVIII

SIMPLE AXIS STRUCTURE VALUES*, FORM 6A BLANK, THIRD RATING, GROUP C (N = 61)

	G	H	J
1	-01	64	01
2	06	54	08
3	26	44	04
4	10	52	15
5	-01	48	13
6	22	48	03
7	54	20	00
8	-01	-01	47
9	49	00	39
10	14	33	41
11	14	48	20
12	41	20	25
16	04	39	37
G	100		
H	48	100	
J	12	50	100

* Decimal points have been omitted. Intercorrelations of the related primary axes have been added in the final three rows.

TABLE XXXIX

INTERCORRELATION AND FINAL RESIDUAL MATRIX*
PAIRED-COMPARISON RATING SCALE
(N = 61)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	16	h^2
1		-085	048	-031	-026	-008	-038	-089	-084	-002	-053	014	-032	-040	038	671
2	-113		004	-019	006	-038	-001	-026	-014	-033	-004	047	-020	-013	083	499
3	028	-174		-055	038	-002	-062	-059	-057	-002	-019	-038	-066	075	-020	422
4	-018	-123	-247		-068	-001	-025	-133	-045	-066	-053	026	-049	-049	018	533
5	209	187	-074	-360		-076	-117	-128	-077	015	-109	009	-119	013	-069	438
6	-249	048	-070	-042	-087		-049	-053	-074	-016	-110	000	033	-058	-007	145
7	-167	074	128	-238	-126	019		-056	-042	-034	-052	-010	-012	-064	-023	175
8	-312	-172	-135	033	-268	-138	-099		-072	-069	-023	035	-050	-010	091	916
9	-302	-277	226	-072	-237	-058	045	004		-031	-054	005	005	-002	042	386
10	-062	367	-485	038	185	157	-167	-236	-414		007	012	-074	038	042	706
11	260	-159	-127	056	-105	-168	-210	-308	-230	100		-066	-008	-019	010	449
12	-412	007	233	-291	037	120	212	120	288	-180	-364		056	034	-069	545
13	418	-160	-051	-198	101	-121	-083	-190	-146	-171	307	-340		-068	080	462
14	055	-306	333	213	-372	-158	-072	-201	175	-304	182	-249	-056		-001	617
16	350	382	-334	204	138	012	-200	-341	-243	509	189	-204	119	-080		687

* Residuals have been placed in the upper triangle, underlined, and decimal points have been omitted. Computed communalities have been added in a final column.

TABLE XL

CENTROID MATRIX*, PAIRED-COMPARISON RATING SCALE
(N = 61)

	I	II	III	IV	V	VI
1	537	433	349	151	216	-060
2	281	-519	110	-200	231	214
3	-459	268	342	-078	047	118
4	131	224	-543	-202	233	-276
5	343	-252	431	214	-129	-094
6	-052	-239	-106	-144	-223	056
7	-259	-114	205	-053	036	220
8	-369	-185	-389	608	380	-283
9	-521	138	094	-118	-126	-238
10	578	-489	-298	-145	-126	086
11	407	435	-120	049	-233	152
12	-528	-418	243	-051	-088	-150
13	328	359	267	364	-105	105
14	-190	652	-141	-336	104	109
16	694	-090	049	-400	047	-180

*Decimal points have been omitted.

TABLE XLI

TRANSFORMATION MATRIX* PAIRED-COMPARISON RATING SCALE
(N = 61)

	K	L	M	N	O	G_2
I	1326	-2225	-0201	-3098	4749	8374
II	-1851	2765	-4706	3789	1216	-1086
III	-2136	-5478	-4591	2283	-3887	0591
IV	-0561	-5691	-0278	-7455	4738	-4827
V	5067	4420	-7463	1314	-2232	0567
VI	8017	2338	-0978	3679	5781	-2172

* Decimal points have been omitted.

TABLE XLII

SIMPLE AXIS STRUCTURE VALUES*, PAIRED-COMPARISON RATING SCALE
(N = 61)

	K	L	M	N	O	G_2
1	-03	-20	-53	-03	16	38
2	41	00	00	00	00	36
3	-06	08	-32	43	-30	-38
4	00	48	00	00	00	22
5	-15	-58	01	-32	04	25
6	00	00	33	00	00	02
7	14	01	-08	21	-13	-21
8	00	00	00	-55	00	-52
9	-36	06	02	22	-43	-34
10	24	-06	44	-31	34	56
11	00	00	00	00	46	22
12	-21	-18	18	03	-49	-33
13	-07	-35	-24	-15	35	05
14	04	56	-31	58	-08	-09
16	00	00	00	00	00	83
K	100					
L	-44	100				
M	34	-17	100			
N	-09	-51	24	100		
O	-61	14	-26	34	100	
G	00	00	00	00	00	100

* Decimal points have been omitted.
The intercorrelations of the related primary factors have been added in the six final rows.

SECTION IV

SUMMARY AND IMPLICATIONS

Review of the Plan of the Study

This study proposed to investigate the ratings given by their superintendents to selected Iowa State Teachers College graduates from two points of view:

1. What do these ratings tell about these Iowa State Teachers College graduates?
2. What do they suggest regarding rating schemes or systems?

The initial ratings given to a group of teachers who left teaching before a second rating could be secured were compared with the initial ratings for a group who remained longer in teaching. Comparisons were made of means and factor structures of traits. First and second ratings for the same teachers were compared with respect to whether the raters changed or remained the same and with respect to time lapse between ratings. Factor patterns of the first and second ratings for the total group irrespective of time or rater were compared. First, second, and third ratings for the group followed up a third time were analyzed and the factor pattern of the third rating compared with the previously obtained patterns. As a second part of the analysis, three simultaneous ratings on different instruments were analyzed. The three types of ratings obtained were: (1) trait ratings on a five-point scale, (2) rank orders of traits on a paired-comparison instrument, and (3) a general category rating.

Summary of the Findings

The conclusions reached from this investigation relative to the Iowa State Teachers College graduates studied may be stated as follows:

1. In general, the teachers studied were considered acceptable by their superintendents, only 4 percent (9 out of 220) being given an over-all below average initial rating and 3 percent (2 out of 61) being given an over-all below average third rating.
2. The teachers who dropped out of teaching before the second rating received lower initial mean ratings on every trait than the teachers who remained longer in teaching. The traits in which the differences most favored the teachers who remained longer in the teaching profession were Interest in School Activities, Courtesy and Friendliness, and Discipline.
3. Discipline was the only trait upon which the teachers, for whom three ratings were secured, showed a gain with each successive rating. As a group these teachers' greatest weakness in the first year of teaching was Discipline. However, both the absolute value of the mean of the ratings on this trait and the rank of the mean on this trait increased with each successive rating.
4. Among the lowest means at all three rating periods were those for Knowledge of Subject Matter, General Culture, Resourcefulness, and Speech.
5. The means for the two items, Cooperation and Loyalty, and Courtesy and Friendliness, were the highest at each of the three rating times.

The conclusions reached from this investigation relative to the rating systems or schemes employed were as follows:

1. A general factor did not account for the intercorrelations of the ratings on either instrument used. When the same instrument was employed the same number of factors, namely, three, was needed to account for the intercorrelations. None of the factors appeared to be consistent in all three rotated solutions.
2. A greater number of factors, namely, six, was needed to account for the intercorrelations of the same traits on the paired-comparison instrument than was needed to account for the intercorrelations of the ratings on the five-point scale.
3. Correlations between successive trait ratings of the same persons were all different from zero at the one percent level, trait by trait, when the raters were the same and nominally equal to zero when the raters changed.
4. The trait ratings on the five-point scale and on the paired-comparison instrument were all positively correlated, pair by pair, with nine out of the twelve correlations being significantly different from zero. However, the correlations are probably lower than their reliabilities; if so, each is measuring something specific in addition to the variance they have in common.
5. The high correlations between the trait ratings on the five-point scale and the general category rating seem to indicate that the individual trait ratings actually are adding very little to our

knowledge about the teachers as a group which a general category rating could not supply. This does not mean that individual trait ratings may not be desired for diagnostic purposes, but for indications of general merit one general rating may suffice.

6. The high correlations between Resourcefulness as marked on the paired-comparison instrument and the general category rating and between the paired-comparison rating of Knowledge of Subject Matter and the general category rating seem to indicate that these traits are more characteristic of the good teachers, or perhaps, more important in the minds of the superintendents, than such traits as Health and Courtesy which have high negative correlations with the general category rating.

7. The trait ratings on Health had the least relationship to general all-around merit. This low correlation probably can be attributed to the lack of variance of the trait ratings on this item since all the ratings on this trait were generally high.

Implications of the Findings

The findings of this research may have implications for Iowa State Teachers College both as curriculum revisions are contemplated and as ratings are interpreted for future placements of their teachers. Though the averages on none of the ratings are actually low enough to cause alarm, the lower mean ratings on such traits as Knowledge of Subject Matter and Speech may have some direct bearing on curriculum planning for the future teachers. Some further information, however, would be needed from the superintendents before specific recommendations for curriculum revisions could be made. For example, since these are elementary teachers, it would be necessary to know whether the superintendent in rating the teacher on Knowledge of Subject Matter gives the rating on the basis of her knowledge of the actual elementary subjects she is teaching or whether this rating represents his estimate of her knowledge of method of presenting subject matter and of child psychology. Also, each teacher, before she may graduate from Iowa State Teachers College and be certified to teach, must take certain required work in speech and pass a speech check before a board of specialists. Therefore, it would be helpful to know what the superintendents are rating when they rate this item before revisions of the program were carried out.

The fact that the mean of the initial rating on Discipline was lower than the mean for any other trait but that it rose with each successive rating may have significance in the interpretation of the ratings which come to the Placement Bureau at the end of each teacher's first year of teaching. A low rating on this trait at the end of her first year may not be as indicative of her future potentialities as a low rating on Resourcefulness which had a low mean on the initial ratings, increased very little with successive ratings, and which had the highest correlation with the general category rating at the third rating.

The findings of this research might also be useful in setting up equations for the prediction of future success of Iowa State Teachers College candidates. Though the correlations with a general category rating were high, the matrix of intercorrelations was not of rank one. This fact that a general factor does not account for the intercorrelations of the trait ratings indicates that a single average of the trait ratings is perhaps an incomplete summary of the data. Teaching success may be more accurately expressed in terms of several different factors. These factors need to be identified more clearly and perhaps separate predictions should be made for each of the several factors.

Though the paired-comparison instrument is a quite cumbersome instrument to use, it may have some possibilities for securing future ratings on Iowa State Teachers College teachers. The instrument might be shortened some by leaving out a few of the items which are not particularly descriptive of either good or poor teachers and all of the items perhaps need not be scored. The scoring of only those items which are most characteristic of good teachers and least characteristic of good teachers might give more actual information about the teacher than the trait ratings on the five-point scale which are more highly saturated with a general factor.

The findings of this study may have some implications both for the improvement of rating scales in general and for the one in use at Iowa State Teachers College in particular. Courtesy and Friendliness often are found as one combined item on rating scales as also are Cooperation and Loyalty. This research would seem to indicate that though these pairs do measure something in common they also possess enough specificity that perhaps they should be separated on the scales. On the other hand, the item Health, with consistently high ratings and low variance, is not functioning and could be dropped from the scale with little loss in information concerning the teachers.

Since, in every instance in this study, fewer factors than the number of traits were needed to account for the intercorrelations, the technique of factor analysis may lead to a refinement of rating scales and a reduction in the number of ratings asked for. Three, four, or even six ratings may be made to yield the same information formerly obtained from twelve or fifteen. The most important items on each of the several fac-

tors need to be more clearly identified and then ratings made in terms of them.

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PERSONALITY AND TEACHING SUCCESS

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THE PROBLEM AND ITS SIGNIFICANCE

1.1 Introduction. A problem of paramount importance in teacher education is that of selecting from the candidates for the teaching profession those who will later be successful as teachers.

Much effort has been expended on the problem and its ramifications; a recently published annotated bibliography of studies of teacher competence lists 1000 items published since 1890 (42).[1] One hundred and fifty-three of these, dealing specifically with the measurement and prediction of teaching success, have been summarized by Barr (9).

It is clear from the literature in the field that a solution to the problem of predicting teaching success is intimately connected with the discovery of reasons why teachers succeed or fail. Beginning with early studies such as those by Bullesfield (25) and Littler (70), investigators have sought to determine reasons for success or failure. On the basis of such investigations, Barr (13) lists 17 common causes of failure among teachers. The items include at least six relating to personality: initiative, common sense, adaptability, singleness of purpose, sympathetic understanding, and personality. Butsch (31) in a summary of studies concerning the opinion of pupils relative to the traits desirable for success in teaching, found mentioned most frequently items such as fairness, kindness, pleasantness and patience, items generally associated with personality. Witty (126) in two studies involving replies from some 47,000 pupils, found among the most frequently mentioned positive and negative traits, items such as cooperative democratic attitude, kindliness, or bad-tempered and intolerant, unfair, and the like.

The evidence indicates that personality is an important variable affecting teaching success. This investigation is concerned with the relationship between the two.

1.2 Statement of the Problem. In view of the presumed relation between personality and teaching success, this study seeks to answer two questions:

1. Are the personalities of good and poor teachers, as evaluated by Cattell's 16 Personality Factor Test, characteristically different?

2. Are the personalities of good and poor teachers, as evaluated by a paired comparison scale based on Cattell's 20 surface traits, characteristically different?

1.3 Significance of the Study. As a result of this study, relationships between personality and teaching success (both as defined here) will either be (a) Indicated, (b) Doubtful, or (c) Not Indicated.

In case (a) the techniques used here may be refined and used to help in the selection of prospective teachers. In case (b) further investigation may be desirable. In case (c) it may be concluded that the definitions and techniques used in this study are unrewarding and some other approach should be taken to the problem.

SECTION II

DESIGN OF THE STUDY

1. Introduction. In this section we shall describe the subjects, the data-gathering devices, and the proposed analysis of the data.

2. The Subjects. The group of subjects originally chosen for this study were 146 individuals enrolled in two sections of Education 75, an undergraduate course in the Psychology of Learning, at the University of Wisconsin. These subjects were seniors, to graduate in the spring of 1950, and eligible for their first teaching positions in the fall. Of this number, approximately 40 graduated and secured their first teaching positions in central and sourthern Wisconsin high schools. Complete data were obtained for 32, who constitute the group here studied.

Percentile scores on the American Council Psychological Examination administered to most of the subjects as part of the procedure of admis-

* The writer expresses his sincere appreciation to Dr. A. S. Barr, whose patience, understanding, helpful criticism and valuable suggestions have made the completion of this study possible; to Dr. Chester W. Harris and Dr. Dorothy M. Knoell, for their interest and assistance.

1. Numbers in parentheses identify the reference in the appended bibliography.

sion to the University ranged from 29 to 100, with an average of 72. Undergraduate grade-point averages ranged from 1.13 to 2.7 (where the passing grade of C = 1.00 and the highest grade of A = 3.00), with an average for the group of 1.81. It is thought that the group is representative of recent graduates in education at the University of Wisconsin.

3. Data-Gathering Devices.

3.1 Personality

3.11 The 16 PF-Test. Data for Cattell's source personality traits were obtained by administering both forms of his 16 PF Test (Appendix 1).* The rationale back of the test has been given in Section II. The validity is logical. The split-half reliability of the test on a sample of 200 of the of the general population, corrected to the full number of items in the A and B forms, is reported in the test manual to be as follows for the various factors: A, 0.84; B, 0.70; C, 0.71; E, 0.82; F, 0.85; G, 0.56; H, 0.74; I, 0.54; L, 0.55; M, 0.72; N, 0.65; Q_1, 0.50; Q_2, 0.61; Q_3, 0.53; Q_4, 0.76.

The test consists of a series of questions, each followed by possible responses of "Yes," "?", and "No." Cattell recommends the forced choice response with the elimination of "?" under certain conditions. The recommendation was followed in this study.

The subjects were allowed to take as much time as they needed to finish both forms of the test. The tests were administered to the subjects at their convenience in the spring of 1950. In each case the same directions were given to the subject before the testing period began (Appendix 2).

3.12 The Surface Traits. The rationale back of Cattell's surface traits is described in the last section. As also described there, the traits were here divided into three groups, because certain traits were to be assessed by interview; certain, by a friend of the subject; and certain, by a supervisor or superior of the subject. The groups follow[2] (trait numbers and fuller descriptions are found in reference 32):

(1) Assessed by interview
- 7. Sociability vs. Timidity, Hostility, Gloominess
- 10. Liveliness, instability, verbal expressiveness vs. Reserve, quiescence, naturalness
- 13. Aesthetic interests, thoughtfulness, constructiveness vs. lack
- 14. Physical strength, endurance, courage vs. Physical inactivity, avoidance of danger
- 17. Curiousity, wide interests vs. limited interests
- 18. Hypochandriacal taciturn retroversion vs. Eloquence, interest in future
- 20. Inflecibility, wandering, vs. Adaptableness, ease of settling down

(2) Assessed by friend
- 3. Balance, frankness, optimism vs. melancholy, agitation
- 6. Boldness, independence, toughness vs., Timidity, inhibition, sensitivity
- 8. General emotionality, high-strungness, instability vs. Placidity, deliberateness, reserve
- 9. Gratefulness, friendliness, idealism vs. Sadism, slanderousness, suspiciousness
- 11. Imaginative intuition, curiousity, carelessness vs. Thrift, inflexible habit, smugness
- 12. Bohemian, disorderly vs. persevering, pedantic
- 15. Amourousness, playfulness vs. propriety

(3) Assessed by a supervisor or superior
- 1. Fineness of character vs. moral defect, non-persistence
- 2. Realism, emotional integration vs. neuroticism, evasion
- 5. Egotism, assertion, stubbornness vs. Modesty, self-effacement, adaptability
- 16. Alcoholism, rebelliousness, carelessness vs. Piety, reverence, thrift
- 19. Asceticism, eccentricity vs. comfort-loving conventionality

The traits were identified by descriptive terms used by Cattell. In each group each trait was randomly paired with every other trait, and the rater marked that trait of the pair which in his judgment was most descriptive of the subject. A rating was required on each pair.

Each subject was first interviewed. All subjects were told the purpose of the interview, each interview being prefaced with the same introductory statement (Appendix 3).

Each interview was conducted in an informal manner calculated to establish rapport with the

* All references to appendices may be found in original thesis on file, Library, University of Wisconsin.

2. Surface trait number 4, related to intelligence, was not assessed for reasons given in Part 5, Section III.

subject and to insure not only his cooperation in the interview but also in the testing program and future visitations. However, each interview was essentially standardized in that certain questions were asked in a given order (Appendix 4) to obtain a basis for assessing desired traits. The interview sheet was marked after the subject had been interviewed (Appendix 5).

At the time of the interview the names and addresses of a friend and of a supervisor or superior of the subject were obtained. Rating blanks were sent to them, together with an explanatory letter, directions (Appendix 6, 7) and a stamped return envelope.

3.2 Teaching Effectiveness and Acceptability. Two criteria for teaching success were used in this study: expert opinion of a teaching performance and acceptability of the teacher to his principal or superintendent. To obtain data, each subject was visited by two staff members of the University of Wisconsin in the late fall or winter of 1950, when the subject had been teaching for three months or more.

3.21 Expert Opinion of a Teaching Performance. Each subject was observed for one or more periods of classroom teaching by two raters. These raters (staff members of the University of Wisconsin judged competent for the task) made independent ratings of that teacher's effectiveness. As a guide for the observations to be made the Wisconsin Adaptation of the M-Blank was used (Appendix 8), although only the final judgment provided for on the Blank was actually recorded. Prior to the program of visitation the raters met and agreed upon the procedure to be followed in making the ratings; this was probably reflected in the reliability of the two independent ratings, which, for the subjects in this study, was .77.

A third expert opinion was obtained from the teacher's supervisor or principal, again on the Wisconsin Adaptation of the M-Blank. These ratings were generally higher than the ratings assigned by the visiting observers. The correlation of the average of the observers' ratings with the principals' M-Blank ratings was .61.

3.22 Acceptability. A second criterion of success was the acceptability of the teacher to the principal or superintendent. The development of the criterion has already been discussed in the last section.

After observing the teacher in the classroom, the visitors spent some time talking to the employing official who was responsible for retaining or promoting the teacher. Every effort was made to establish rapport before the standardized portion of the interview was begun. In each case, after empathy appeared between the school official and the visitor, the following previously memorized questions were asked:

a. How do you like this teacher?
b. Does she get along well with the students?
c. Do the parents feel the same way as the pupils do about the teacher?
d. Is the teacher happy here? Does she have friends on the faculty, in the community, and the like?
e. Does the teacher have any particular weaknesses or strengths?
f. In terms of beginning teachers with whom you have worked in the past, and in the light of our discussion as a whole, would you consider this teacher as among the best, above average, average, below average, or failing as a teacher?

In this way the school official was led to consider most phases of the teacher's relationship to her job, the school, the pupils, and the community, before he was asked for his ratings.

4. Analysis of the Data. The hypothesis to be tested is that individuals for whom a series of measurements is available can be classified into two groups on the basis of those measurements. One traditional approach is to compute the significance of the difference between the means of groups, taking each character separately. This method is inefficient in that it does not make possible the evaluation of the relative amount of information for differentiation provided by the several measurements; neither does it combine the information taking into account the intercorrelations, if they exist, between the characters dealt with (61).

For this study, two methods were chosen to analyze the data, since they provide independent tests of the hypothesis, and, to some extent, complement each other: the use of Fisher's discriminant function, and factor analysis.

4.1 The Discriminant Function: Introductory Statement. The discriminant function may be used to test the hypothesis that a given set of objects may be divided into two groups on the basis of a series of measurements for each object.

Difficulty arises when the two as yet hypothetical groups are seen to be fairly similar with respect to all the measurements. In such case, we may be unable to classify the objects on the basis of any one measurement because of the overlap in the distributions of this measurement for the two postulated groups.

But it still may be possible to weight and combine the measurements to produce, for each object, a kind of index number the distribution of which has no overlap for the two groups. To discriminate between the groups, we would then find a critical value of the index number such that any object whose index value fell below the critical

value would be classified as belonging to one group; otherwise, to the other group.

The immediate problem is, then, to discover that function of the measurements providing an index number which best discriminates between the groups. The problem was solved by Fisher, and his procedures may be used to obtain the function.

Having obtained the function, we must still inquire whether it supports our hypothesis of two groups. We may obtain two clearly differentiated groups by using the index numbers we have established, and so support the original hypothesis. But it may happen that even this function which discriminates best between the as yet hypothetical groups does not in reality provide two essentially non-overlapping distributions for the index numbers of the objects in each group. We would then conclude that the hypothesis of two groups is not substantiated.

4.11 Intuitive Approach to the Discriminant Function. To illustrate the concept further for those who have had no technical contact with the discriminant function, let us consider a set of objects each of which has only two measurements associated with it. We wish, if possible, to divide the objects into two groups on the basis of the measurements.

We intend to weight and combine the measurements to produce an index number for each object. For simplicity we restrict ourselves to a linear combination of the measurements. We seek, then, a relationship of the kind

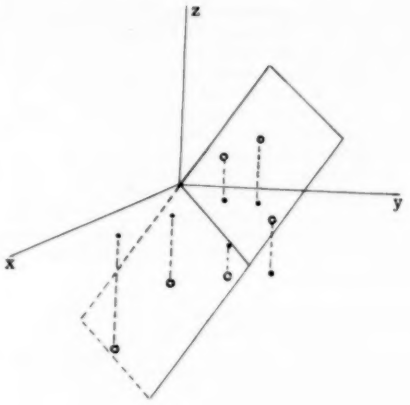
$$(1) \qquad z_i = \lambda_1 x_i + \lambda_2 y_i$$

where z_i is the desired index number and λ_1 and λ_2 are weights for the measurements x_i and y_i. We must determine the λ's by means of some criterion that will enable the z_i to serve as an index for differentiating the members of the two groups.

Geometrically, it will be recognized that equation (1) represents a plane in three dimensions passing through the origin; this illustration is taken from Hoel (56).

The indices z_i are then distances to the discriminating plane from the x-y plane, and are functions of (x_i, y_i).

If the sets of points on the x-y plane corresponding to the values (x_i, y_i) can be separated into two groups by means of a plane through the origin, it is clear that the values of z_i corresponding to the two groups will assume increasingly divergent positive and negative values as the discriminating plane approaches perpendicularity to the x-y plane. This is desirable in itself, for we want the index numbers for the two groups to be clearly separated.



At the same time, as the discriminating plane approaches perpendicularity, the variations of z_i within a group become increasingly larger for both groups. Consequently the increase in the separation of the values of z_i for the two groups occurs at the expense of an increase in the separation of the values of z_i within each group. This is undesirable as will appear.

Graphically, the situation is this; ideally, we wish the index numbers z_i to be distributed somewhat as follows:

Figure 4.112

By moving the discriminating plane towards or away from perpendicularity with the x-y plane, the means of the z_i for the two groups separate. But the standard deviations for the z_i also increase. When the plane is nearly horizontal, we may have for the distributions of the z_i for the two groups something like this:

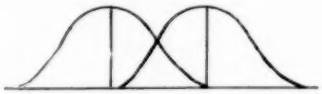


Figure 4.113

It is impossible to distinguish between the two groups in the area of overlap.

When the plane is nearly vertical, the means are widely separated, but the standard deviations have also increased so that the distributions of the z_i resemble:

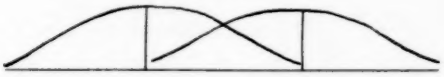


Figure 4.114

Again we have an objectionable area of overlap. What we have gained by separating the means, we have lost because of the increase in standard deviations.

But there is an intermediate position of the discriminating plane that will provide the maximum discrimination, or minimum overlap, with the widest possible separation of the means consistent with minimum standard deviations.

Since we are necessarily interested in both the means and standard deviations for the two groups of z_i, we may consider the ratio

$$\frac{\text{difference in means of groups}}{\text{standard deviation within groups}}$$

We notice that for a good discrimination between the two groups, the fraction must take one of its largest possible values, since ideally the numerator would be large and the denominator small.

As the discriminating plane moves from vertical to horizontal the ratio changes in value. It may be intuitively evident that the most discriminating position of the plane will be that for which the fraction above is the largest. We are thus led to discover the conditions under which the ratio is a maximum. Having discovered them, we are able to fix the location of the discriminating plane.

Having obtained the most discriminating position of the plane, we may find the distances to it from the points on the x-y plane. We then consider the distributions of the distances, or the z_i, for the two groups. We must then ask in sampling studies whether the two distributions are sufficiently different so that it is unlikely the differences could have occurred by chance. Finally, if this is the case, we examine the distributions to see how useful they are, for it may happen that they are significantly different, but yet possess large areas of overlap which makes classification of objects uncertain.

The reasoning above may be generalized to include more than two measurements, although hyperspace makes visualization of the problem difficult.

4.12 Mathematical Development of the Discriminant Function. Suppose we have p obervations $X_1 \ldots X_p$ on each of one group of N_1 individuals, and the same on each of another group of N_2 individuals. We require to find some measurement depending on the p observations which will enable us to assign subsequently drawn members correctly to their unknown parent populations (postulated as those corresponding to either N_1 or N_2) with the greatest assurance of success.

For this purpose we shall find p quantities $\lambda_1 \ldots \lambda_2$, and from them and the observations X_i, obtain index numbers z_j related linearly to the variates by

$$z_j = \Sigma \lambda_i X_i.$$

The index numbers are to provide the required information, within the limitations of the data.

The particular statistic for the solution to this problem was developed by Fisher (44).

The criterion on which we shall rely is that the λ's must be chosen to maximize the ratio of the difference between the group means to the standard deviation within the two classes. Such a linear function will distinguish better than any other linear function between the specified groups on whom common measurements are available (61).

Let the difference in the means of the measurements X_i for the two groups be d_i. Then the differences between the means of z for the two specific groups is

$$\bar{z} - \bar{z} = D = \sum_i \lambda_i d_i \; (i = 1 \ldots p)^{3}$$

---

3. For let:

$\bar{z}_k$ = mean index number for group k (k = 1, 2)
z_{jk} = index number for the jth person in group k ($j = 1 \ldots N_k$; k = 1, 2)
X_{ijk} = ith measurement for the jth person in group k ($i = 1 \ldots p$; $j = 1 \ldots N_k$; k = 1, 2)

Then

$$z_{j1} = \lambda_1 X_{1j1} + \ldots + \lambda_i X_{ij1} + \ldots + \lambda_p X_{pj1}$$
$$z_{j2} = \lambda_1 X_{1j2} + \ldots + \lambda_i X_{ij2} + \ldots + \lambda_p X_{pj2}$$

footnote continued.....

Let S_{hi} (h, i = 1... p) be the sums of squares or products from the specific means within groups. Then the variance of z within groups is proportional to

$$S_z = \sum_{hi}\sum \lambda_h \lambda_i \quad S_{hi} \quad (h, i = 1 \ldots p)$$ [4]

The particular function which discriminates best for the two groups will be the one for which the ratio D^2/S is greatest, by variation of the p coefficients $\lambda_1 \ldots \lambda_p$. Therefore we must seek a solution for each λ:

$$\frac{\sigma}{\sigma\lambda}\left(\frac{D^2}{S}\right) = 0$$

This reduces to

$$\frac{D}{S^2}\left(2S\,\frac{\sigma D}{\sigma\lambda} - D\,\frac{\sigma S}{\sigma\lambda}\right) = 0$$

and consequently $\frac{1}{2}\,\frac{\sigma S}{\sigma\lambda} = \frac{S}{D}\,\frac{\sigma D}{\sigma\lambda}$

Evidently S/D is a factor common to the p unknown λ's. Therefore the coefficients required are proportional to the solutions of the equations[5]

$$\begin{aligned} S_{11}\lambda_1 + \cdots + S_{1p}\lambda_p &= d_1 \\ &\cdots\cdots\cdots \\ S_{p1}\lambda_1 + \cdots + S_{pp}\lambda_p &= d_p \end{aligned}$$

Or we may write, in matrix notation,

$$S\lambda = d$$

where

$$\lambda = \begin{bmatrix} \lambda_1 \\ \cdot \\ \cdot \\ \cdot \\ \lambda_i \\ \cdot \\ \cdot \\ \cdot \\ \lambda_p \end{bmatrix} \qquad d = \begin{bmatrix} d_1 \\ \cdot \\ \cdot \\ \cdot \\ d_i \\ \cdot \\ \cdot \\ \cdot \\ d_p \end{bmatrix}$$

$$S = \begin{bmatrix} S_{11} \ldots S_{1i} \ldots S_{1p} \\ \cdots\cdots\cdots \\ S_{i1} \ldots S_{ii} \ldots S_{ip} \\ \cdots\cdots\cdots \\ S_{p1} \ldots S_{pi} \ldots S_{pp} \end{bmatrix}$$

Then $\lambda = S^{-1}d$.

It can be shown (61) that an estimate of "within groups" variance is provided by D with $N_1 + N_2 - p - 1$ degrees of freedom. An estimate of "between groups" variance is provided by

$$\frac{N_1 N_2}{N_1 + N_2} D^2$$

with p degrees of freedom.

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footnote 3 continued....

And

$$\bar{z}_1 = \frac{\sum z_{j1}}{j} = \frac{\lambda_1\sum X_{1j1}}{j} + \ldots + \frac{\lambda_i\sum X_{ij1}}{j} + \ldots + \frac{\lambda_p\sum X_{pj1}}{j}$$

$$\bar{z}_2 = \frac{\sum Z_{j2}}{j} = \frac{\lambda_1\sum X_{1j2}}{j} + \ldots + \frac{\lambda_i\sum X_{ij2}}{j} + \ldots + \frac{\lambda_p\sum X_{pj2}}{j}$$

$$\bar{z}_1 - \bar{z}_2 = \lambda_1\left(\frac{\sum X_{1j1}}{j} - \frac{\sum X_{1j2}}{j}\right) + \ldots + \lambda_i\left(\frac{\sum X_{ij1}}{j} - \frac{\sum X_{ij2}}{j}\right) + \ldots + \lambda_p\left(\frac{\sum X_{pj1}}{j} \quad \frac{\sum X_{pj2}}{j}\right)$$

$$= \lambda_1 d_1 + \ldots + \lambda_i d_i + \ldots + \lambda_p d_p$$

4. For, using the notation of the preceding footnote, the variance of z within groups is proportional to $(z_{jk} - \bar{z}_k)^2$ (j = 1... N_k; k = 1, 2).

Now $z_{jk} = \lambda_1 X_{1jk} + \ldots + \lambda_i X_{ijk} + \ldots + \lambda_p X_{pjk}$

$$\bar{z}_k = \frac{\sum z_{jk}}{j} = \frac{\lambda_1\sum X_{ijk}}{j} + \ldots + \frac{\lambda_i\sum X_{ijk}}{j} + \ldots + \frac{\lambda_p\sum X_{pjk}}{j}$$

footnote 4 continued.....

Applying the F-test,

$$F = \frac{N_1 + N_2 - p - 1}{p} \cdot \frac{N_1 N_2}{N_1 + N_2} D.$$

It is also interesting to note that Wald has provided a practical method for assigning a new individual to one of the two groups with the least risk of the two kinds of error when N_1 and N_2 are sufficiently large (61, 118).

4.13 Assumptions Involved in the Use of the Discriminant Function: Its Interpretation. The discriminant function may be viewed simply as a mathematical procedure for routinely assigning index numbers to new subjects presumably belonging to one of two groups, in order to determine to which group the new subject should be assigned. The basis for assigning the index numbers to new subjects has been derived from the characteristics of two known groups, usually originally separated by means of collateral information not available in the case of new subjects. In such case, no sampling assumptions need be made and the procedure stands or falls on the basis of its utility.

If, as was done in this study, "good" and "poor" groups are selected for analysis, the presence of an "average" group may be implied. The assumption is then that the most discriminating discriminant function can be obtained from the extreme groups, and that "average" subjects will be found to lie on a continuum between the "good" and "poor" groups.[6]

The significance of the difference between the two distributions obtained by means of the discriminant function may be tested by means of a variance-ratio test: commonly the z or F test. In either case the test involves the explicit assumption of random sampling from one of two populations of variates normally distributed with equal population variances (61). It appears that moderate departure from normality does not affect the utility of the test (63).

Since the two groups examined in this study are not random samples, a significant F-test cannot be made. We may, however, say that it is unlikely that as great a separation as that observed would occur by chance if the groups were random samples from a homogenous nearly normal population. The F-test, as it can be used here, provides no conclusive evidence about characteristics of the population from which the groups were drawn.

4.2 Factor Analysis: Introductory Comment. The hypothesis so far dealt with is that the two categories of good and poor teachers have two distinct kinds of personality profiles. To provide an in-

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footnote 4 continued....

then

$$z_{jk} - \bar{z}_k = \lambda_1\left(X_{1jk} - \frac{\Sigma X_{1jk}}{N_k}\right) + \ldots + \lambda_i\left(X_{ijk} - \frac{\Sigma X_{ijk}}{N_k}\right) + \ldots + \lambda_p\left(X_{pjk} - \frac{\Sigma X_{pjk}}{N_k}\right)$$

and

$$(z_{jk} - \bar{z}_k)^2 = \lambda_1^2 (X_{1jk} - \frac{\Sigma X_{1jk}}{N_k})^2 + \ldots + \lambda_1\lambda_2 (X_{1jk} - \frac{\Sigma X_{1jk}}{N_k})(X_{2jk} - \frac{\Sigma X_{2jk}}{N_k}) + \ldots$$

By definition,

$$S_{hi} = (X_{hjk} - \frac{\Sigma X_{hjk}}{N_k})(X_{ijk} - \frac{\Sigma X_{ijk}}{N_k}) \quad (h, i = 1 \ldots p)$$

Consequently,

$$(z_{jk} - \bar{z}_k)^2 = \sum_h \sum_i \lambda_h \lambda_i S_{hi} \quad (h, i = 1 \ldots p)$$

5. For example, for h = 1, we have $S = \lambda_1 \Sigma \lambda_i S_{1i}$

and $\frac{\sigma S}{\sigma \lambda_1} = \Sigma \lambda_i S_{1i} = \lambda_1 S_{11} + \ldots + \lambda_p S_{1p}$

also for h = 1 we have $D = \lambda_1 d_1$ and $\frac{\sigma D}{\sigma \lambda_1} = d_1$.

6. Fisher (44) illustrates the use of a discriminant function obtained from two extreme groups to deal with a third group having quantitative characteristics between those of the first two.

dependent test of the hypothesis, a second method was devised for dealing with the problem.[7] Whereas with the discriminant function two profiles of sub-scores or ratings were studied, this approach will involve an examination of item responses in the 16 PF test.

4.21 Use of Factor-Analytic Techniques to Determine Patterns of Test Responses. For a test containing two items, each person's responses on the test may be thought of as defining a point in a Cartesian coordinate system of two dimensions. By analogy, each person's set of 343 test responses on the 16 PF test may be thought of as defining a point in 343 dimensions. If the point is connected to the origin, the vector obtained may be taken to represent the person's test performance. In the subsequent discussion such a vector will be called a person vector.

In the case of this study, the locations of 18 person vectors (for 10 good and 8 poor teachers) will be determined by use of a metric reference frame involving 343 dimensions.

It is possible to examine the relationship of these person vectors to each other in the space spanned by the group of vectors. Looked at from this viewpoint, there are, in general terms, three possibilities:

1. Vectors for good teachers may be found in one region; vectors for poor teachers, in another.

2. Vectors for good teachers may be found in several regions; for the poor, in several others.

3. Vectors for good and poor teachers may not be distinctly separated; that is, they may be located in space so that no one region tends to hold more of one category than another.

In case one, above, we would conclude that the test responses do separate good teachers from poor teachers in this study, and that each category of teachers makes characteristic responses.

In case two, we would conclude that the test responses reveal several patterns among the good and poor teachers in this study.

In case three, we would conclude that the test responses could not be used in this fashion to separate the good from the poor teachers.

The problem is essentially one of providing an alternative reference frame by means of which the locations of the 18 person vectors may be specified in terms simple enough to make clear which of the three cases above has been encountered.

The first step in the desired simplification is that of obtaining the correlation matrix derived from the score matrix, the responses of each of the 18 subjects being correlated with the responses of every other. Since the correlation between the performances of any two persons may be represented by the scalar product of the person vectors, the correlation matrix defines the lengths and angular relations of the person vectors. Each entry in the correlation matrix (i.e., each correlation between two vectors) relates one vector to another. A column of entries in the correlation matrix completely defines the position of one vector in relation to each of the others without the use of a metric or of coordinates in any given number of dimensions. The cluster or pencil of vectors so established will be called the configuration.

We are interested in finding yet simpler specifications for the configuration, so that we may discover patterns in the responses. To put it another way, we need to find the common elements in the responses, for without similarities there can be no pattern, as we use the term here.

In this instance, when comparing 18 sets of responses, the intercorrelations between a given set of responses and the 17 others indicate the composition of the given set in terms of what it has in common with the other 17. A given set of responses could conceivably be described in terms of those common elements, plus additional elements it may share with no other response.

Since the object of the investigation is the amount of similarity in test responses, we may simplify our investigation by examining just those elements in the responses possessed in common by two or more.

We may do this geometrically by representing each of the person vectors by coordinates

$$(a_{i_1}, a_{i_2} \ldots a_{im}, 0 \ldots 0, a_i, 0 \ldots 0),$$

where the first m coordinates are with reference to axes needed also to locate at least one other vector, and the last n coordinates, consisting of only one value different from zero, are with respect to axes needed to account for the elements in a test response it shares with no others. For simplicity of explanation we may assume that all reference axes are mutually orthogonal, although the restriction is not necessary.

The situation may be made clearer if we consider an example from an intuitive standpoint, and discuss it in general terms.

Suppose we have four tests which are mutually intercorrelated because they each actually involve just two (uncorrelated) abilities. The score on each test may be thought of as the result of the combined effects of the specific amounts of the two abilities exhibited (this accounts for the in-

7. Acknowledgement is due to Dr. Chester W. Harris and to Dr. Dorothy M. Knoell for suggesting the general approach.

tercorrelations) and a third effect produced by response to the peculiar demands of the test which it does not share with any of the other three (this partially explains why the intercorrelations are not perfect).

From the previous discussion it is clear that one individual's performance on the battery of four tests, producing four scores, can be represented by a vector in 4-space. But we choose, in the interests of eventual simplification, to use a more elaborate reference frame than 4 mutually orthogonal axes. There are involved in the four scores two abilities, one or both of which are demanded by all four tests. In addition each of the four performances involves a demand characteristic of a particular test. We may then represent the location of a person vector (i. e., the vector representing a person's performance on the four tests) by reference to six orthogonal axes representing these six items.

The situation is illustrated, by analogy, in the figure below, in which the reader is to imagine plotted three person vectors representing the different performances of three people on the four tests.

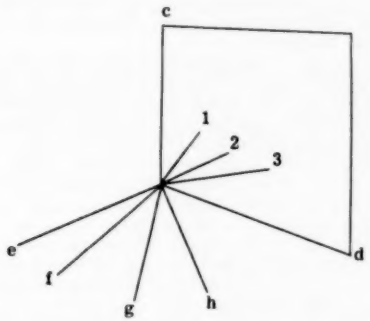

Figure 4. 211

Here the axes for the common elements in the responses are c and d, and the axes for the unique elements are e, f, g, and h. Each person vector (not illustrated) is supposed to lie in a separate 3-space. These different 3-spaces have nothing in common except the plane c-d. The projections of the three person vectors to plane c-d are indicated. If we are interested in the amount of similarity in the responses of the three individuals, we may confine our attention to the plane c-d. We see that persons 2 and 3 responded in substantially the same fashion with reference to ability c.

Each person vector in 6-space may be located by giving first its coordinates with respect to c and d, and then with respect to the other four axes (only one of which latter coordinates will be different from 0). The introduction of the axes e, f, g, and h complicates matters in general, but simplifies our immediate problem of comparing similarities in responses. Any such similarities (or patterns) will be revealed by the configuration of the vectors in 2-space, in the plane c-d.

Consequently, instead of having to examine the configuration of person vectors in 4-space to determine patterns of response, we may examine the common elements giving rise to patterns by examining the projections of the person vectors in 2-space. This is a considerable simplification.

Suppose that we had no information about the "composition" of the test responses, or the elements giving rise to patterns, as described above, but were led to plot them in such a coordinate system. The patterns in response be evident from examining the c-d plane, or, the same thing, from the c and d coordinates of the person vectors.

Supposing this to be our plan of attack, how can we establish such a coordinate system from any matrix of test responses?

It can be shown (107) that the desired coordinate system may be established by working from the reduced correlation matrix (the correlation matrix with the omission of the original unit diagonals). This specifies the configuration of the person vectors in the manner desired: that is, from such a matrix can be obtained the first m coordinates of the person vectors in what has been called common factor space, or the space analogous to the plane c-d above.

Obtaining, then, the configuration of the vectors in common factor space, we must still seek to simplify the description of the configuration, so that we may more easily understand the interrelations of the vectors.

To do this, we shall first seek a minimal number of orthogonal reference axes necessary to define the person vectors in common factor space. Then we shall, in the space so established, arrange the reference axes in such a manner as to indicate as clearly as possible what the relations among the person vectors may be. While in 3-space or less such relations may be apparent without the last step, in space of higher dimensions such simplification may be necessary.

The solution to the first problem may be found in Thurstone's theorem (57) to the effect that the smallest number of orthogonal reference axes that can be used to specify the configuration of n variables in common factor space is the minimum rank of their correlation matrix with the diagonal entries treated as unknown positive values between zero and unity. The requisite axes may be

found by using the centroid method of factor analysis. The solution to the second problem is obtained by rotating the axes established to simple structure.

In more detail, tne first centroid factor obtained from a reduced correlation matrix is a reference axis so located that it is a convenient computational approximation of the axis on which the sum of the projections of the 18 vectors is a maximum. The location of the axis is specified by those projections. The second factor extracted is a reference axis orthogonal to the first; again its location is specified by stating the projections of the 18 vectors on it. The process may be repeated for successive reference axes, to the point where the projections of the 18 vectors on a new axis are all zero: this axis has no utility for locating the vectors, nor can it in general be located in terms of the zero projections, so that neither it nor successive factors, or axes, are obtained.

It is apparent that the number of orthogonal reference axes that can be obtained is dependent upon the space spanned by the configuration of vectors.

Having constructed orthogonal reference axes in this fashion, we have described the original 18 person vectors in terms of projections of their common elements on, conceivably, a lesser number of reference axes. To simplify the description further we rotate the reference axes thus established so that as many vectors as possible will have zero projections on various axes. Having done this we will have achieved relatively simple specifications for the configuration: vectors located in the same region will have similar projections on the reference axes.

4.22 Interpretation of the Results of the Factor Analysis. In this instance, to support the hypothesis that good and poor teachers show two distinct patterns of response when taking the 16 PF test, case 1 (part 4.21) above must: vectors for poor teachers, in another. There are several sub-cases:

1A Vectors for good teachers may be found in one relatively[8] restricted region, but vectors for poor teachers may be considerably scattered throughout a large region.

1B The reverse of 1A may occur, with the vectors for poor teachers found in a relatively restricted region.

1C Vectors for both good and poor teachers may be found in their distinctive and relatively small regions.

1D Vectors for both good and poor teachers may be found in their distinctive but relatively large regions.

The number of axes established and the projections of the vectors on them in the final solution will indicate which of the cases or sub-cases we have encountered. The possibilities may be discussed in general terms.

In case 1, Part 4.21, we may expect that the 18 vectors would span a considerable number of dimensions; at least there is no a priori reason to suppose that the responses will be sufficiently similar that the vectors, which could span as much as 18-space, might be included in two or 3-space. In any case, the projections of the vectors upon the rotated axes finally established would be unrelated to the two categories of good and poor teachers.

In case 2, part 4.21, we may expect that a lesser number of reference axes will be required than in case 3. Even if the clusters of vectors establisned are orthogonal, only as many orthogonal axes would be needed for the reference frame as there are clusters of vectors, in general terms. In any case, the projections of the vectors upon the rotated axes finally established would show similarities within categories of good and poor teachers.

In case 1A, a number of orthogonal axes would be required. Just one axis might serve to locate the vectors for the good teachers (hence the term, relatively restricted region); but several might be required to locate the vectors for the poor teachers. In any case, the rotated axes would show that the projections for the good teachers would be similar and large for the same axis; those for the poor teachers would not.

In case 1B, a similar situation would hold except that in this instance the vectors for the poor teachers would have similar projections upon one of the rotated reference axes.

In case 1C, several orthogonal reference axes might be necessary, but vectors for the good teachers would have large projections upon one rotated axis; vectors for the poor, upon another.

In case 1D, a larger number of orthogonal axes would be required to describe the configuration. In the final rotated solution the group of vectors for the good teachers would show large projections on several axes, but small projections on the rest; projections for the group of vectors for the poor teachers would be large on the latter but small on the former.

4.3 Relation Between the Two Solutions. Interpretations of the results of the factor analysis and

8. The meaning of "relatively small" or "relatively large" will become clearer in the light of subsequent discussion.

of those from the discriminant function should show similarities. However, the possibilities are so numerous that the relation between the two solutions obtained will be discussed in the next section when the actual findings have been made.

SECTION III

ANALYSIS OF THE DATA

1. Introduction. Having described the reasons for the choice of data-gathering devices, and discussed metnods of analyzing the data obtained, we shall, in this section, analyze the data.

2. Comparison of Teacher Ratings. Data were obtained for 32 subjects (Appendix 9). For each teacher there were available four ratings of teaching efficiency or acceptability. One was an acceptability rating made by the principal or supervisor; three were ratings on the Wisconsin Adaptation of the M-Blank, made independently by the principal or supervisor, and two observers. Each rating was made on the basis of a five-point scale from 5 (the lowest) to 1 (the highest).

An indication of the reliability of the observers' ratings is the correlation of .77 between them.

Since the observers' ratings were not always made by the same two people, it seemed reasonable to average the ratings when comparing them with those of the principal or supervisor. The correlations between the acceptability rating, the principal's or supervisor's rating on the M-Blank, and the average of the observers' ratings on the same instrument, are shown in Table 2.1.

Testing the significance of the largest difference between the two correlations by the method suggested by Fisher for small samples (45), we obtain Table 2.2.

The difference does not exceed twice the standard error; it appears that the differences in the correlations are not greater than could occur by random sampling from the same population. In this case we conclude that the evidence is not sufficient to show that acceptability ratings are essentially different from either of the M-Blank ratings.

3. The Selection of the Good and Poor Teachers to be Studied. It was felt that characteristic differences between good and poor teachers could most easily be isolated by examining the extremes: the best teachers observed, and the poorest observed. The best and poorest teachers on the basis of each of the three ratings are shown in Table 3.1.

It will be noted that of the eight teachers obtaining the highest acceptability ratings, six were among those receiving the highest M-Blank ratings by the principals, and six received highest ratings by the observers. Of the eight teachers obtaining the lowest acceptability ratings, seven received the lowest M-Blank ratings by the principals, and seven were among the group rated lowest by observers. No teacher rated poor in one case received a good rating in another; the reverse is also true.

Because the study deals with personality the acceptability ratings were chosen as the criterion for the selection of good and poor teachers. However, it appears that extreme groups of approximately eight good and eight poor teachers would have had a similar composition if either of the other criteria had been used.

Eight teachers were rated as highly acceptable by their principals or supervisors, and eight were rated average or below. It was necessary to increase the size of this group of 16 so that certain later computations would be meaningful.[9] For that reason two more subjects were added to the "good" group. The particular subjects chosen were selected because while their acceptability rating was only "above average", their principals or supervisors gave them the highest rating obtainable on the M-Blank.

Most of the remainder of this section will be devoted to analyzing the data associated with the ten good and eight poor teachers whose selection has just been described. The data to be treated are given in Table 3.2.

4. The Discriminant Function. In each case where the discriminant function was involved an S-matrix was set up as follows:

$$S = \begin{bmatrix} S_{11} \cdots S_{1i} \cdots S_{1n} \\ \cdots\cdots\cdots\cdots \\ \cdots\cdots\cdots\cdots \\ \cdots\cdots\cdots\cdots \\ S_{i1} \cdots S_{ii} \cdots S_{in} \\ \cdots\cdots\cdots\cdots \\ \cdots\cdots\cdots\cdots \\ \cdots\cdots\cdots\cdots \\ S_{n1} \cdots S_{ni} \cdots S_{nn} \end{bmatrix}$$

9. Using the F-Test for the discriminant function requires at least 17 subjects if 15 subscores are involved.

TABLE 2.1

INTERCORRELATION AMONG CRITERION RATINGS

		1	2	3
1.	Acceptability			
2.	Principal's rating on M-Blank	+.80		
3.	Average, two observers' ratings, M-Blank	+.69	+.61	

TABLE 2.2

SIGNIFICANCE OF DIFFERENCE BETWEEN CORRELATIONS OF RATINGS

r	z	n-3	Reciprocal
.80	1.10	26*	.038
.61	.71	26	.038

Difference $.39 \pm .28$

*For three subjects there was no principal's rating on the M-Blank. These three are omitted from this table, and from the correlations computed.

TABLE 3.1

BEST AND POOREST TEACHERS ON BASIS OF RATINGS

Criterion	Acceptability		Principal's Rating M-Blank		Average of Two Observers' Ratings, M-Blank	
Category	Good	Poor	Good	Poor	Good	Poor
Ratings Used	1	3, 4, 5	1	3, 4, 5	2 or less	3 or more
Teacher Identification Number	101 107 109 111 118 120 129 130	102 106 110 115 117 119 123 126	104 107 109 111 113 116 118 120 124 129	106 110 115 117 119 123 125 126 127	101* 103* 107* 109* 112* 113 114* 118 120* 122* 124* 127* 128* 130	102 105 106 108 110** 111** 115** 116** 117 121 123 125** 126** 131**

* Average rating of 2
**Average rating of 3

TABLE 3.2

RAW DATA FOR GOOD AND POOR TEACHERS

	Teacher's Original Identification Number	Identification Number Used for Remainder of Section	Acceptability Rating	Principal's Rating M-Blank	Observer's Rating M-Blank	Observer's Rating M-Blank	Raw Scores, 16 PF Test													
							A	C	E	F	G	H	I	L	M	N	O	Q_1	Q_2	Q_3	Q_4
	101	1	1	2	2	2	22	30	26	36	26	46	20	30	40	22	32	28	22	18	24
	107	2	1	1	2	2	20	28	23	46	30	48	20	9	24	23	17	21	23	26	23
	109	3	1	1	2	2	24	34	30	36	20	48	10	18	10	22	2	10	8	26	16
	111	4	1	1	3	3	34	44	26	34	26	46	10	12	12	20	12	20	14	30	18
Good	113	5	2	1	1	1	32	32	20	32	26	38	20	22	20	22	16	26	16	30	14
	118	6	1	1	1	2	24	38	20	36	30	46	22	10	10	22	4	22	18	30	4
	120	7	1	1	1	3	28	28	16	26	32	40	14	14	18	24	16	18	10	32	18
	124	8	2	1	2	2	24	40	30	40	24	50	20	12	20	20	4	22	18	28	12
	129	9	1	1	2	2	22	32	24	44	14	34	18	22	26	16	22	20	28	12	22
	130	10	1	-	1	2	14	44	20	32	22	40	14	8	18	22	0	10	14	30	6
	102	11	5	-	4	5	20	42	24	24	30	16	20	16	8	22	2	14	20	30	4
	106	12	3	4	3	4	24	28	24	28	32	22	20	24	24	28	22	24	26	24	34
	110	13	3	3	3	3	20	32	22	28	26	48	14	16	22	16	10	14	12	34	10
Poor	115	14	3	4	3	3	10	32	12	24	16	8	22	22	34	10	42	32	16	16	40
	117	15	3	3	4	4	30	40	24	32	24	48	16	10	16	24	0	18	8	32	6
	119	16	3	3	3	2	24	40	30	36	26	48	16	12	16	24	4	20	18	24	10
	123	17	5	4	5	5	28	40	24	46	24	48	18	16	12	28	16	20	8	24	24
	126	18	3	-	-	3	22	36	2	22	36	20	18	16	18	20	18	20	12	32	16

(Continued).....

TABLE 3.2 (Continued)

	Teacher No.	Friend's Rating							Superior's Rating					Interview Rating						
		1	2	3	4	5	6	7	1	2	3	4	5	1	2	3	4	5	6	7
	1	4	5	6	2	1	0	3	1	1	2	3	3	4	5	6	1	2	0	3
	7	3	6	1	4	2	0	5	3	3	0	2	2	5	6	3	1	2	0	4
	9	5	6	1	4	3	0	2	4	3	0	1	2	6	3	5	4	2	0	1
	11	4	5	3	2	6	0	1	4	3	1	0	2	4	2	3	6	5	1	0
	13	4	6	1	4	4	0	2	3	4	1	1	1	6	0	5	1	3	4	2
Good	18	4	3	1	2	6	0	5	4	3	0	1	2	5	6	3	4	1	0	2
	20	5	6	2	4	3	0	1	4	3	0	1	2	4	1	3	6	2	5	0
	24	4	5	6	2	1	0	3	3	3	1	1	2	3	4	6	0	2	2	4
	29	5	6	2	3	1	0	4	4	3	1	2	0	6	4	4	2	4	1	0
	30	6	4	1	2	5	0	3	3	4	1	0	2	4	1	4	6	3	1	1
	2	4	3	1	5	6	0	2	4	3	0	2	1	6	2	4	4	4	0	1
	6	5	6	1	3	4	0	2	3	4	2	0	1	5	1	2	6	3	4	0
	10	5	6	2	4	3	0	1	4	3	0	1	2	6	3	5	4	2	0	1
	15	2	5	6	2	2	0	4	4	3	1	0	2	4	5	5	1	2	0	4
Poor	17	5	6	2	3	4	0	1	5	2	0	1	2	5	4	5	2	4	0	1
	19	5	6	1	4	3	0	2	4	3	1	0	2	5	2	6	1	4	3	0
	23	3	2	3	5	5	1	0	4	3	1	2	0	4	6	1	5	3	0	2
	26	3	4	0	6	5	2	1	4	3	0	1	2	5	5	3	1	5	0	2

Here S_{ij} is the within groups sum of squares or products for the two groups.[10]

If

$$\lambda = \begin{bmatrix} \lambda_1 \\ \cdot \\ \cdot \\ \cdot \\ \lambda_i \\ \cdot \\ \cdot \\ \cdot \\ \lambda_p \end{bmatrix} \quad \text{and} \quad d = \begin{bmatrix} d_1 \\ \cdot \\ \cdot \\ \cdot \\ d_i \\ \cdot \\ \cdot \\ \cdot \\ d_p \end{bmatrix}$$

where λ_i are the coefficients of the discriminant function and d_i are the differences between the means of the respective measures in the two groups, it has been shown that (part 4. 12, Section II)

$$\lambda_i = S^{-1} d_i.$$

To apply the F-test, the value of D is needed, where

$$D = \lambda_1 d_1 + \cdots + \lambda_i d_i + \cdots + \lambda_p d_p.$$

The "within groups" sums of squares is D, with $N_1 + N_2 - p - 1$ degrees of freedom, where N_1 is the number of members of group 1; N_2, of group 2, and p is the number of subscores.

The "between groups" sums of squares is $\frac{N_1 N_2}{N_1+N_2} D^2$, with p degrees of freedom.

The index numbers are calculated by means of the function

$$z_i = \lambda_1 X_{iA} + \cdots + \lambda_i X_{ij} + \cdots + \lambda_{15} X_{iQ_4},$$

where z_i is the desired index number for person i, and X_{ij} is the score of person i on factor j ($j = A \ldots Q_4$) of the 16 PF test.

The discriminant function is closely related to the theory of multiple correlation. Fisher (44) has shown that

$$R^2 = \frac{\frac{N_1 N_2}{N_1+N_2} D}{1 + \frac{N_1 N_2}{N_1+N_2} D}$$

where R^2 is the square of the multiple correlation of the dichotomous classification with the measurements $X_1 \ldots X_p$.

The multiple correlation is of some interest, but it should be remembered that here it is based on groups at the extremes of the distribution, hence it may be much larger than a multiple correlation based on the entire distribution.

The F-test is ordinarily used so that generalizations about the character of a population can be made from a random sample of that population.

The group here studied is not a random sample, and the F-test here applied is used as a descriptive instead of an inferential statistic. It provides a measure of the observed separation of the groups studied. Here, in the case of a significant F-test, we may say that the groups are so widely separated that if they were random samples it is unlikely that they would come from the same population, our attention is fixed on the amount of separation observed, not on an inference from the data to another population.

The F-test is also given so that, should another descriptive study of this kind be made, the findings can be easily compared.

4. 1 Analysis of the Ratings on Surface Traits Using the Discriminant Function. Ratings were obtained for 19 of Cattell's 20 surface traits.[11] Five of the traits thought to be known best to a superior of the subject were rated by the superior; seven thought best known to a friend were rated by a friend; and seven thought most easily evaluated upon interview were rated by that means.

In each case a paired-comparison scale was used, each trait being paired with every other

---

10. That is, if X_{ijk} is the raw score for individual i in test j for group k,

then $$S_{11} = \left(\Sigma X_{i11} - \frac{(\Sigma X_{i11})}{N_1}\right)^2 + \left(\Sigma X_{i12} - \frac{(\Sigma X_{i12})}{N_2}\right)^2$$

$$S_{12} = \left(\Sigma X_{i11} - \frac{(\Sigma X_{i11})}{N_1}\right)\left(\Sigma X_{i21} - \frac{(\Sigma X_{i}21)}{N_1}\right) + \left(\Sigma X_{i12} - \frac{(\Sigma X_{i12})}{N_2}\right)\left(\Sigma X_{i22} - \frac{(\Sigma X_{i22})}{N_2}\right)$$

and so on.

11. As in the case of the source traits, the surface trait related to intelligence was omitted. See Part 5.

in its group. In every pair the item most descriptive of the subject was indicated. The ratings were scored by recording the number of times each trait was shown as the most descriptive of the pair. The result was three sets of items for every subject, each set containing descriptions ranked in the order that they were thought to apply to the subject being rated.

An S matrix was obtained from each of the three sets of rankings for the ten good and eight poor teachers. Because the paired-comparison method of ranking was used a set of ranks was not independent; for example, if seven items are to be ranked, the location of six fixes the location of the last. Consequently, the rows of the S matrices obtained were not independent; each row was a linear combination of the others in the matrix. To obtain S^{-1} needed for the discriminant function, a row was omitted from each matrix when the inverses were computed. Inasmuch as the row dropped from each matrix was not independent, no information was lost. Since each row was linearly dependent on all the others it made no difference which row was deleted; for convenience the last row was chosen. A discriminant function producing the same separation between the groups would be obtained no matter which row was dropped; however, the set of λ's associated with the raw data employed in the discriminant function would change, as the data changed.

4. 11 Analysis of the Ratings by a Superior. The raw data are found in Table 3. 2.

The S matrix is given in Table 4. 111. The S^{-1} matrix is given in Table 4. 112; and the d matrix in Table 4. 113. The λ's originally obtained are found in Table 4. 114. To make them more convenient to work with when computing index numbers, they have been divided by $(-\lambda_1)$ and the result multiplied by 100, as found in the same table.

The F-test is applied in Table 4. 115. The difference between the groups is significant at the 5% level but not at the 1% level. The implication is here that the λ's will provide a function which discriminates well between the two groups (of ten and eight) from which it was developed. The multiple correlation is given in the same table.

The index numbers for the 32 subjects are given in Table 4. 116. Those for the good and poor groups are plotted in Figure 4. 111. The distribution of index numbers for the good, poor, and average groups is shown in Table 4. 117.

4. 111 Interpretation of the Results. With only five items to be compared, some of which were almost invariably ranked last, rankings of the same pattern occurred for different subjects. For example, the traits of two poor and three good subjects were ranked in exactly the same way, so that there could be no discrimination between them on the basis of the rankings. In spite of the significant F-tests, the discriminant function is of doubtful utility for separating the good from the poor teachers. The range of index numbers for the average teachers substantially includes the range for both good and poor. It appears that on the whole index numbers for average teachers may lie between those for the good and poor, but the situation is not clear.

We conclude that for these ratings, characteristic patterns of responses are not established for good and poor teachers.

4. 12 Analysis of the Ratings by a Friend. The raw data are found in Table 3. 2. The S matrix is given in Table 4. 121. The S^{-1} matrix is given in Table 4. 122; and the d matrix, in Table 4. 123. The λ's originally obtained are found in Table 4. 124. To make them more convenient to work with when computing index numbers, they have been divided by $(-\lambda_1)$ and multiplied by ten, as found in the same table.

The F-test is applied in Table 4. 125. The difference between the groups is significant at the 1% level. The implication is here that the λ's will provide a function which discriminates well between the two groups (of ten and eight) from which it was developed. The multiple correlation is given in the same table.

The index numbers for the 32 subjects are given in Table 4. 126. Those for the good and poor groups are plotted in Figure 4. 121. The distribution of index numbers for the good, poor and average groups is shown in Table 4. 127.

4. 121 Interpretation of the Results. In spite of the significant F-test, there is a considerable area of overlap. On the whole, it appears that the index numbers for the average teachers tend to lie between those for the good and poor. The range of the distribution for average teachers is so large, however, that, given the index number for a new subject, it would be difficult to assign him with assurance to any one of the three groups. We conclude that while distinctive patterns of ratings for good and poor teachers are suggested in this case, they are too amorphous to be practical, as they stand.

4. 13 Analysis of the Ratings Obtained by Interview. The raw data are found in Table 3. 2. The S matrix is given in Table 4. 131. The S^{-1} matrix is given in Table 4. 132; and the d matrix, in Table 4. 133. The λ's originally obtained are found in Table 4. 134. To make them more convenient to work with when computing index numbers, they have been divided by λ_1 and multiplied by ten, as found in the same table.

The F-test is applied in Table 4. 135. The difference between the groups fails to be significant at the 5% level. The implication is here that the λ's do not provide a function which discriminates

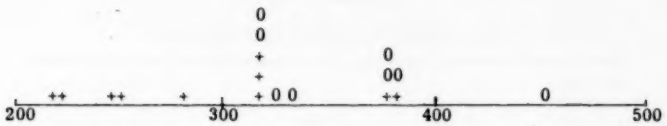

Figure 4. 111

Plot of Index Numbers for Good and Poor Groups, Superiors' Ratings

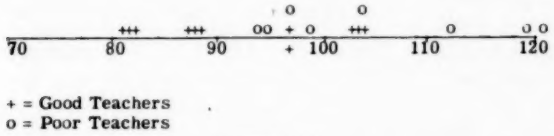

Figure 4. 121

Plot of Index Numbers for Good and Poor Teachers,
Friends' Ratings

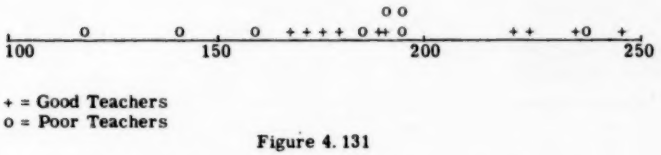

Figure 4. 131

Plot of Index Numbers for Good and Poor Teachers
Interview Ratings

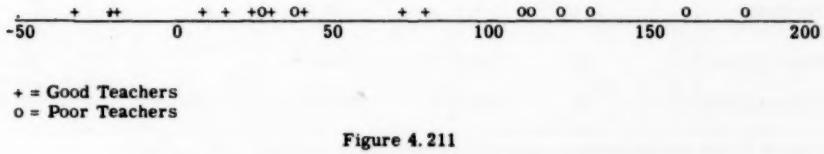

Figure 4. 211

Plot of Index Numbers for Good and Poor Groups, 16 PF Test

TABLE 4.111

S MATRIX FOR SUPERIORS' RATINGS

+10.100				
+ 2.000	+8.000			
- 6.100	0.000	+7.975		
- 3.600	-6.000	-0.775	+12.475	
- 2.400	-4.000	-1.100	- 2.100	+9.600

TABLE 4.112

S^{-1} MATRIX FOR SUPERIORS' RATINGS
(Row 5 of S Omitted)

+.24898728	+.00140797	+.19869580	+.08487304
	+.19621332	+.10349771	+.09542041
		+.28514970	+.08003162
			+.15551823

TABLE 4.114

THE λ's
SUPERIORS' RATINGS

Original λ's	$-(-\lambda_i) \times 100$
-.13180517	+100.00000
+.03778838	- 28.66988
-.09169056	+ 69.56522
-.00286533	+ 2.17391

D = .08445559
D^2 = .00713275

TABLE 4.113

d MATRIX
SUPERIORS' RATINGS

-0.700
0.000
+0.075
+0.325
+0.300

TABLE 4.115

THE F-TEST
SUPERIORS' RATINGS

Source of Variation	D. F.	S. S.	M. S.	F	
					12 D. F. 1%=14.37
Within Groups	13	.08445559	.00649658		5%= 5.91
					14 D. F. 1%=14.24
Between Groups	4	.00317011	.00079253	8.197	5%= 5.87

Multiple R with the dichotomous classification for these subjects: .52

TABLE 4. 116

INDEX NUMBERS BASED ON SUPERIORS' RATINGS

	Teacher No.	Index No.
	1	217
	2	218
	3	316
	4	383
Good	5	257
Teachers	6	316
	7	316
	8	285
	9	387
	10	254
	11	318
	12	324
	13	316
Poor	14	383
Teachers	15	444
	16	383
	17	387
	18	316
	19	254
	20	344
	21	116
	22	318
	23	412
	24	254
Average	25	383
Teachers	26	316
	27	254
	28	316
	29	187
	30	316
	31	187
	32	318

TABLE 4. 117

DISTRIBUTION OF INDEX NUMBERS BASED ON SUPERIORS' RATINGS

Lower Boundary of Interval	Good Teachers	Poor Teachers	Average Teachers
100			1
125			
150			
175			2
200	2		
225			
250	2		3
275	1		
300	3	4	5
325			1
350			
375	2	3	1
400			1
425		1	
450			

TABLE 4.121

S MATRIX FOR FRIENDS' RATINGS

+15.900						
+ 1.700	+27.100					
-10.600	- 1.800	+60.400				
+ 0.400	- 1.800	-20.600	+20.900			
+ 4.200	-20.400	-28.800	+ 5.200	+47.600		
- 1.750	- 4.250	- 3.000	+ 5.000	+ 3.000	+3.875	
- 9.850	- 0.550	+ 4.400	- 9.100	-10.800	-2.875	+28.775

TABLE 4.122

S^{-1} MATRIX FOR FRIENDS' RATINGS
(Row 7 of S Omitted)

+.08060572	+.01041116	+.02358451	+.00912752	+.00756903	+.04844292
	+.09779689	+.04351385	+.01795797	+.06059773	+.07556512
		+.06398439	+.05410865	+.04937846	-.00013386
			+.12250256	+.03371219	-.11845907
				+.07194254	+.00891173
					+.50866721

TABLE 4.123

d MATRIX
FRIENDS' RATINGS

+0.150
+0.450
+0.400
-1.100
-0.800
-0.375
+1.275

very well between the two groups (of ten and eight) from which it was developed. The multiple correlation is given in the same table.

The index numbers for the 32 subjects are given in Table 4.131. Those for the good and poor groups are plotted in Figure 4.131. The distribution of index numbers for the good, poor, and average groups is shown in Table 4.137.

4.131 Interpretation of the Results. As the F-test indicates, the groups are not well separated. It is also apparent from the plot, Figure 4.131, that the traits as assessed by the interviewer have no appreciable relation to teaching acceptability.

4.2 Analysis of the 16 PF test Using the Discriminant Function. The data supplied by the 16 PF test was to be analyzed by two different methods. For reasons that appear in section 5, the score on factor B of the test was omitted when the data were analyzed factorially. Therefore to provide strictly comparable results, the scores on factor B were omitted when the data were treated by use of the discriminant function.

4.21 Analysis. The raw data are found in Table 3.2. The S matrix is given in Table 4.211. The S^{-1} matrix is given in Table 4.212; and the d matrix, in Table 4.213. The λ's originally obtained are found in Table 4.214. To make them more convenient to work with when computing index numbers, they have been divided by $(-\lambda_1)$ and the result multiplied by ten, as found in the same table.

The F-test is applied in Table 4.215. The difference between the groups is significant at the 1% level. The implication is here that the λ's will provide a function which will discriminate well between the two groups (of eight and ten) from which it was developed. The multiple correlation is given in the same table.

The index numbers for the 32 subjects are given in Table 4.216. Those for the good and poor groups are plotted in Figure 4.211. The distribution of index numbers for the good, poor, and average groups, is shown in Table 4.217. It will be seen that save for a small area of overlap, the good and poor groups are well separated. The average group, however, has a wide range, including both the good and poor groups, and extending beyond them.

4.22 Interpretation of the Results. If the discriminant function is to be useful to us the index numbers obtained should be regularly associated with the acceptability ratings for the whole range of ratings. A hypothesis entertained when the study was designed was that index numbers for the average teachers would be found to lie on a continuum with those for the good and poor teachers, and between them.

That hypothesis is not supported, but another is suggested by the results obtained. If we abandon the concept that "average" should lie some place between "good" and "poor", we may frame another hypothesis. It is possible that personality traits need to be "balanced" in a certain way for the teacher to be superior. Lacking this "balance", perhaps the teacher is likely to be only average; with a certain makeup she may be poor. The distribution observed might be explained in this manner, but the data do not permit the new hypothesis to be adequately tested.

We conclude that characteristic response patterns to the 16 PF test have been suggested, (the new hypothesis) but not established, by means of the discriminant function.

5. The Factor Analysis of the 16 PF Test. The data for the factor analysis were the 18 sets of responses to both forms of the 16 PF tests, with the omission of the items giving a score on Factor B. These items were omitted because in contrast to the "yes-no" responses for all other questions, these called for the choice of one of three possible answers. Tetrachoric correlations were used for the "yes-no" items; they could not be used for items with one of three possible answers. The B factor is termed by Cattell a measure of intelligence, and previous studies have shown little relationship between intelligence and success in teaching.[12] Therefore it was judged that the omission of these items would not greatly affect the over-all response patterns, and the factor analysis was made of the 343 items, with the omission of those giving a score on the B factor.

The tetrachoric correlations of the 18 sets of 343 responses were obtained, giving a symmetric 18×18 matrix shown in Table 5.1. Tetrachoric correlations were appropriate because the data in the variables correlated was in the form of responses in only two categories. Underlying normality is assumed in the distribution thus categorized; in this case such an assumption seems in accord with Cattell's theories.

The communalities were estimated as the largest entry in each row, and five factors were removed from the matrix by Thurstone's method of centroid factor analysis (107). The residual

12. Probably a person who has graduated from a teacher-training curriculum possesses enough intelligence to succeed as a teacher; teaching success is then attributable to other characteristics. Here the mean score for the ten good teachers on factor B was 19.4; for the eight poor teachers, 19.5.

TABLE 4.124

THE λ's FOR FRIENDS' RATINGS

Original λ's	$+(-\lambda_1) \times 10$
-.00805191	+ 10.00000
-.03359306	+ 41.72061
-.05025942	+ 62.41925
-.08620674	+107.06371
-.04982362	+ 61.87801
-.02635741	+ 32.73436

$D = 1.0814190725$
$D^2 = 1.1694672114$

TABLE 4.125

THE F-TEST FOR FRIENDS' RATINGS

Source of Variation	D. F.	S. S.	M. S.	F
Within Groups	11	1.0814190725	.0983108248	1% = 5.07
Between Groups	6	5.1976320489	.8662720082	8.812 5% = 3.09

Multiple R with the dichotomous classification for these subjects: .91

TABLE 4.126

INDEX NUMBERS BASED ON FRIENDS' RATINGS

	Teacher No.	Index No.
	1	89.9
	2	89.5
	3	97.7
	4	102.1
Good Teachers	5	102.9
	6	81.3
	7	103.9
	8	89.9
	9	80.8
	10	81.3
	11	113.4
	12	93.1
	13	103.9
Poor Teachers	14	94.1
	15	99.4
	16	97.7
	17	119.8
	18	121.4
	19	88.3
	20	97.7
	21	103.1
	22	93.1
	23	103.2
	24	104.7
Average Teachers	25	70.8
	26	100.3
	27	105.4
	28	102.1
	29	103.0
	30	90.0
	31	86.6
	32	97.6

TABLE 4. 127

DISTRIBUTION OF INDEX NUMBERS BASED ON FRIENDS' RATINGS

Lower Boundary of Interval	Good Teachers	Poor Teachers	Average Teachers
70			1
72			
74			
76			
78			
80	3		
82			
84			
86			1
88	3		2
90			
92		1	
94		1	
96	1	1	2
98		1	
100			1
102	3	1	4
104			2
106			
108			
110			
112		1	
114			
116			
118		1	
120		1	
122			

TABLE 4. 131

S MATRIX FOR INTERVIEW RATINGS

+12. 400						
- 6. 400	+70. 400					
+ 0. 400	- 3. 400	+34. 400				
- 2. 400	-26. 600	-29. 400	+74. 400			
+ 3. 600	- 8. 600	+ 3. 850	+ 4. 150	+25. 775		
0. 000	-44. 000	- 4. 000	+10. 000	- 2. 250	+48. 000	
- 7. 600	+18. 600	- 1. 850	-30. 150	-26. 525	+ 7. 750	+55. 275

TABLE 4. 132

S^{-1} MATRIX FOR INTERVIEW RATINGS
(Row 7 of S Omitted)

+. 10936108	+. 04391269	+. 03105909	+. 02689108	-. 00636700	+. 03694079
	+. 08122152	+. 04747678	+. 03891010	+. 03180388	+. 07095024
		+. 07439673	+. 04204410	-. 00281504	+. 04082896
			+. 04076914	-. 00094346	+. 03063347
				+. 04615483	+. 01477903
					+. 08358426

TABLE4. 133

d MATRIX FOR INTER-VIEW RATINGS

-0. 400
+0. 400
+0. 350
-0. 350
+0. 025
+0. 250
-0. 275

TABLE 4.134

THE λ's FOR INTERVIEW RATINGS

Original λ's	+ λ_1 x 10
-.01564453	-10.00000
+.03645453	+23.30177
+.02802736	+17.91512
+.01288863	+ 8.23843
+.01946193	+12.44009
+.03843774	+24.56944

D = .0362341628
D^2 = .0013129146

TABLE 4.135

THE F-TEST FOR INTERVIEW RATINGS

Source of Variation	D.F.	S.S.	M.S.	F	
Within Groups	11	.0362341628	.0032940148		1% = 7.79
Between Groups	6	.0058351760	.0009725293	3.387	5% = 4.03

Multiple R with the dichotomous classification for these subjects: .37

TABLE 4. 136

INDEX NUMBERS BASED ON INTERVIEW RATINGS

	Teacher No.	Index No.
Good Teachers	1	223
	2	177
	3	218
	4	197
	5	173
	6	189
	7	234
	8	245
	9	196
	10	184
Poor Teachers	11	141
	12	194
	13	157
	14	199
	15	199
	16	236
	17	196
	18	120
Average Teachers	19	134
	20	174
	21	161
	22	226
	23	230
	24	240
	25	235
	26	194
	27	213
	28	191
	29	181
	30	170
	31	174
	32	149

TABLE 4. 137

DISTRIBUTION OF INDEX NUMBERS BASED ON INTERVIEW RATINGS

Lower Boundary of Interval	Good Teachers	Poor Teachers	Average Teachers
100			
110		1	
120			
130			1
140		1	1
150		1	
160			1
170	2		3
180	2		1
190	2	4	2
200	1		
210			1
220	1		2
230	1	1	2
240	1		
250			

TABLE 4.211

THE S-MATRIX FOR THE 16 PF TEST

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	+561.9														
2	+ 83.5	+517.5													
3	+165.5	+146.5	+746.0												
4	+ 99.2	+ 62.0	+411.0	+755.6											
5	+170.5	- 63.5	-182.5	-198.0	+513.5										
6	+521.1	+259.5	+749.5	+768.8	+ 26.5	+2345.9									
7	-107.2	-100.0	- 84.0	+ 46.4	+ 32.0	- 276.8	+225.6								
8	- 43.8	-320.0	- 19.5	- 89.4	-114.0	- 512.7	+106.4	+606.1							
9	-360.7	-471.5	-166.5	- 35.6	-194.5	- 446.3	+213.6	+540.4	+1171.1						
10	+223.8	+ 34.0	+160.5	+139.4	+208.0	+ 354.2	- 22.4	- 75.1	- 242.4	+306.1					
11	-322.5	-687.5	-507.0	-103.0	-196.5	-1158.5	+296.0	+833.5	+1311.5	-334.5	+2250.0				
12	- 7.3	-215.5	-135.0	+ 18.6	- 24.5	- 353.7	+238.4	+299.1	+ 521.9	- 96.1	+ 862.0	+547.6			
13	-178.4	-179.0	+ 96.5	+107.8	- 7.0	- 465.6	+219.2	+234.3	+ 384.2	- 41.3	+ 427.5	+236.3	+604.9		
14	+221.2	+176.0	-101.0	-260.4	+352.0	+ 370.8	-133.6	-371.4	- 517.6	+133.4	- 779.0	-293.4	-346.2	+619.6	
15	-206.8	-567.0	-184.5	+102.6	-223.0	- 809.2	+146.4	+606.1	+ 903.4	-143.1	+1700.5	+606.1	+320.3	-683.4	+1668.1

matrix is found in Table 5. 1. In view of the fact that the correlations were tetrachoric it was judged that the residuals were not large enough to warrant further factoring.

Extended vector plots were made of the five factors. Harris (52) has shown that an n-space hypertetrahedron projects on a plane as a configuration having n vertices. Taking variables 2, 11, 12, 15, and 17 as vertices, lines connecting them inclosed the plots in most cases, and seemed to indicate that five factors were adequate to account for the correlations. The factor pattern is shown in Table 5. 2.

The procedure outlined by Harris (51, 53) was used for direct rotation to primary structure. The direction numbers of the variables (2, 11, 12, 15 and 17) judged to be on or near the intersection of hyperplanes containing the other variables were written to form a matrix. Normalized, the matrix became the T-matrix. The product of T'T gave the Φ-matrix, and the inverse of Φ was obtained. The multiplication $T\Phi^{-1}$ was performed and the resultant matrix normalized to produce the Λ matrix, which is the matrix of direction cosines needed to rotate the orthogonal axes to give simple structure values for the factor pattern, or Thurstone's V matrix. The several matrices here referred to are given in Tables 5. 3 to 5. 8.

5. 1 Interpretation of the Factor Analysis. The theoretical possibilities have been discussed in part 4. 21 of Section II. To make the rotated factor pattern clearer so as to tell which case has been encountered, we may simplify the pattern by using Thurstone's criterion for a zero ($0 \pm .199$) and by rounding the other loadings to two places. We then obtain Table 5. 11.

If we consider the configuration of the vectors in several 3-spaces their interrelations become clearer (Table 5. 12).

Upon examination of the different 3-spaces, it is clear that case 1 (part 4. 21, Section II) does not hold; that is, person vectors for neither the good nor the poor teachers occur in distinct or well-defined clusters.

Response patterns are somewhat similar for teachers 5, 7 and 10; for teachers 4 and 17; for teachers 6, 11 and 13; and for teachers 2 and 16. In three of these cases the patterns established include both good and poor teachers. However, person vectors for eight other teachers are not closely associated with the groups just listed, or with each other, and any underlying pattern in the whole configuration remains ambiguous.

The evidence so far points clearly only to the conclusion that there are no small separate clusters for good or poor teachers; it is not sufficient to rule out some looser association between the respective responses of the two groups.

Examining the factor pattern further, it is interesting to note that the loadings on factors A and B distinguish, better than the other loadings, between good and poor teachers. Factor A has four loadings for good teachers, one for poor, and a negative loading for a poor teacher. Factor B has four loadings for poor teachers, one for a good, and a negative loading for a good teacher. The facts suggest that those responses causing the good teachers to have loadings on factor A, and the poor on factor B, are somewhat characteristic of the two groups.

If the 16 PF sub-scores of the good teachers with loadings on factor A are compared with those of poor teachers on factor B we find a marked difference in patterns of response on the 16 PF source traits F and H. The good teachers are above-average[13] on those two source traits, whereas the poor teachers are below average. Using Cattel's terminology for source trait F, the good teachers are more than usually talkative, cheerful, placid, frank, and quick; whereas the poor teachers are below average in these respects. That is, they are characterized by being unusually silent, depressed, anxious, uncommunicative, and languid.

For the source trait H, the good teachers are above average in their tendencies to be gregarious, adventurous, frivolous, to have abundant emotional responses, strong artistic or sentimental interests, and to be interested in the opposite sex. The poor teachers are below average in these respects; they are shy, cautious, conscientious, lack emotional response, and artistic or sentimental interests, and have a comparatively slight interest in the opposite sex.

On factor D are found four good teachers, one good teacher with a negative loading, one poor teacher, and one poor teacher with a negative loading. By comparing the 16 PF sub-scores of the good teachers on this factor with the subscores of the poor teachers on Factor B, we observe that the good teachers tend to be above average on source traits F and H, and average or slightly below, on source trait N. The poor teachers are below average on all three. These loadings strengthen the differences between the good and poor teachers on source traits F and H, just discussed, and suggest in addition that, in Cattell's terminology, good teachers are approximately average in their tendencies to be polished, fastidious and cool, while poor teachers are definitely below average in these respects. That is, poor teachers tend to be clumsy, easily pleased, but more attentive to people than good teachers. It is on the basis of these differing

13. Average as used here and in the subsequent discussion means the average established by Cattell's standerdization of the 16PF test.

TABLE 4.212

THE S^{-1} MATRIX FOR THE 16 PF TEST

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	+02009099	+00874842	+00152044	-01235066	+00637954	+00426975	+03684608	-00759998	+00701420	-01543096	-00105229	-02948671	-00391561	-01490762	+00964431
2		+01250097	-00521333	-01346756	+00050134	+01038264	+02706473	+00319071	-00119269	-00676598	-00128644	-01900527	+00514398	-00517916	+01207944
3			+01360506	+00879310	+00690076	-01053822	-00734518	-00860912	+00550148	-00054772	+00655898	+00170545	-01079276	-00004258	-00931402
4				+03385699	+00539504	-02197024	-05192956	+00036474	+00735555	+00706604	-00081636	+03352717	-01116822	+01521988	-01928192
5					+02119233	-00581450	+00386750	-00316700	+00858625	-01549592	-00626616	-00530005	-01356861	-01499540	+00101263
6						+01800809	+03182155	+00536370	-00827191	-00459776	-00126692	-01904045	+01191490	-00625177	+01490713
7							+11963289	-00522133	-00075768	-02924284	-00066547	-08192582	+00527731	-03172440	+03783767
8								+01397171	-00551216	-00023536	-00663938	+00758246	+00682543	+00645882	+00504177
9									+01192256	-00494620	-00394627	-00294197	-00988909	-00456144	-00193460
10										+02493998	+00874132	+02108280	+00582488	+01549986	-01263164
11											+01667579	-00428260	+00159848	+00647586	-00899620
12												+06446370	-00192409	+02276392	-02345042
13													+01755207	+00795297	+00659192
14														+02977076	-00955982
15															+02074437

TABLE 4.213

d-MATRIX FOR 16 PF TEST

	+ 2.15
	- 1.25
	+ 3.25
	+ 6.20
	- 1.75
	+11.35
	- 1.20
d =	- 0.80
	+ 1.05
	- 0.20
	- 1.75
	- 0.55
	+ 2.10
	- 0.80
	- 2.30

TABLE 4.214

THE λ's FOR THE 16 PF TEST

Original λ's	+ by $-\lambda_1$ and multiplied by 10
-.0280787170	+10.00000000
-.0196559150	+ 7.00028957
-.0152029420	+ 5.41440051
+.0296638360	-10.56452685
-.0290537544	+10.34725139
-.0016129530	+ 0.53882554
-.0847108765	+30.16906947
+.0147400615	- 5.24954950
-.0141739325	+ 5.04792740
+.0236340250	- 8.41706014
+.0056855155	- 2.02484875
+.0555844510	-19.79593687
+.0300784400	-10.71218459
+.0399528425	-14.22887037
-.0232823835	+ 8.29182596

$D = +.246861327900$
$D^2 = +.0609405152$

TABLE 4.215

THE F-TEST FOR THE 16 PF TEST

Source of Variation	D. F.	S. S.	M. S.	F	
Within Groups	2	.2468613279	.1234306640		1% = 6.36
Between Groups	15	.270846734	.0180564489	6.836	5% = 3.68

TABLE 4.216

INDEX NUMBERS OBTAINED WITH DISCRIMINANT FUNCTION

	1	+ 32.8
	2	- 21.2
	3	+ 40.4
	4	+ 6.5
Good Teachers	5	- 21.9
	6	+ 15.6
	7	+ 76.4
	8	+ 72.8
	9	- 12.3
	10	+ 28.4
	11	+174.9
	12	+118.2
	13	+ 30.2
Poor Teachers	14	+155.1
	15	+107.5
	16	+ 40.1
	17	+105.6
	18	+131.7
	19	+137.4
	20	+161.7
	21	+383.1
	22	-136.4
	23	+256.4
	24	- 39.4
Average Teachers	25	-521.1
	26	-423.8
	27	+214.5
	28	+555.8
	29	+336.1
	30	+ 58.4
	31	-341.4
	32	+ 46.8

characteristics that the different response patterns for source trait N may be explained.

The differences between the responses of the good teachers with loadings on factors A and D appear chiefly in source traits E, F, M, Q_2 and Q_4. The scores of good teachers with loadings on factor D are below average on source trait E, slightly above on F, slightly below on M, and considerably below average on Q_4. In contrast, good teachers with loadings on factor A are above average on source trait E, considerably above on F, above on M and Q_2, and slightly below average on Q_4. The response patterns suggest that the good teachers with loadings on A are, in comparison with those with loadings on D, more dominant, talkative, unconventional, self-sufficient, and subject to more nervous tension.

Three good teachers have loadings on factor E, while only one poor teacher has such a loading. However, two of the three good teachers also appear on factor A so that not much additional information is provided by factor E.

We conclude that we can partially identify case 2 previously discussed in part 4.21, Section II. That is, vectors for good teachers in this study are found in several regions: the situation with respect to vectors for poor teachers is ambiguous. It is not clear whether the latter fall within one or several large regions. At the level of response patterns this means that the good teachers have exhibited several patterns, the most prominent elements of which have been discussed. There is at least one pattern exhibited by poor teachers; there are probably others but they are not identifiable.

The interpretation of information about the response patterns in terms of Cattell's source traits is reasonable, and in accord with ordinary experience.

We conclude that certain elements of some response patterns have been identified, but complete patterns have not been identified. A given subject could not be categorized as a good or poor teacher on the basis of his responses to the 16 PF test on the basis of the information so far available.

6. Comparison of the Application of the Discriminant Function and of Factor Analysis to the 16 PF Test. The discriminant function used in this study provides general information, by means of the λ's, about which of the source traits play the largest part in discriminating between the two groups of good and poor teachers. The function is most useful when there are just two homogeneous groups, for if within each dichotomy there are found several sub-groups, the λ's provide only average estimates of the importance of the distinguishing characteristics between the two major groups. It may happen that accurate classification requires that the relative importance of the traits in the composite vary from sub-group to sub-group, but the λ's actually obtained are mathematical constructs based on the general effects of the sub-scores in the two groups: any sub-groups which may exist are not taken account of as such.

The technique of factor analysis used here makes possible the comparison of complete profiles as entities, and indicates the presence of sub-groups if they exist.

In this study the index numbers for good teachers are found in a relatively restricted range, and a high sub-score on one or several source traits associated with negative λ's large in absolute value requires high sub-scores on other traits associated with large positive λ's; otherwise the index number will not be in the range established by the other good teachers. The implication is that several patterns of response are typical of good teachers. To put it another way on purely arithmetic grounds, low scores in certain traits may be compensated for by high scores in others: the range of possibilities is very large, yet only certain combinations produce index numbers falling in the good range. The same situation holds for the index numbers for poor teachers.

This means that from the standpoint of factor analysis it would not be expected that person vectors for good or poor teachers would be found in small clusters; this indeed was the finding.

We conclude that from the data provided by the discriminant function it seems probable that not one, but several combinations of responses are characteristic of good teachers; and several others, of poor teachers. If these relatively distinctive patterns of response are not exhibited, the teacher is likely to be average.

The factor analysis provides no information about the response patterns of average teachers. It strengthens the probability of several patterns of response for good teachers, and suggests as does the discriminant function that several other patterns may characterize poor teachers. In addition it provides information about certain predominant elements in some of the response patterns of good teachers, particularly as contrasted with the responses of poor teachers.

In terms of Cattell's personality theory, the implications are that various (but certain) combinations of certain personality traits characterize good teachers; and various combinations of others, poor teachers. Teachers are successful then, not because they are cast in the same mold, but because there is a kind of "balance" among their personality traits. Another kind of "balance" means they will probably be poor teachers. Lacking either, they will likely be average.

Neither technique employed provides enough information so that the complete patterns the techniques suggest may be recognized.

TABLE 4.217

DISTRIBUTION OF INDEX NUMBERS BASED ON THE 16 PF TEST FOR GOOD, POOR, AND AVERAGE TEACHERS

Lower Boundary of Interval	Good Teachers	Poor Teachers	Average Teachers
-550			
-525			1
-500			
-475			
-450			
-425			1
-400			
-375			
-350			1
-325			
-300			
-275			
-250			
-225			
-200			
-175			
-150			1
-125			
-100			
- 75			
- 50	1		1
- 25	2		
0	2		
+ 25	3	2	1
+ 50	1		1
+ 75	1		
+100		3	
+125		1	1
+150		2	1
+175			
+200			1
+225			
+250			1
+300			
+325			1
+350			
+375			1
+400			
+425			
+450			
+475			
+500			
+525			
+550			1
+575			

TABLE 5.1

FACTOR ANALYSIS OF THE 16 PF TEST

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1		-070	+008	-006	-087	+014	+010	-023	+031	+036	-016	+065	-010	+051	-010	+014	-003	-022
2	+53		+001	+004	000	-041	+003	-018	+081	+035	-026	-001	+028	+011	-074	-048	-052	+046
3	+22	+48		-020	+001	+032	+021	+007	-044	+004	+015	-011	+079	-045	-024	-008	-022	+044
4	+28	+42	+66		+059	-026	-052	-010	-008	+015	+018	000	+021	-025	+020	-063	+001	+020
5	+24	+36	+62	+52		+010	-005	+045	+028	-010	-021	+076	+002	+017	-034	+067	-006	-063
6	+31	+50	+70	+66	+60		-025	+012	-018	+010	+039	-025	-037	-008	+017	+031	-011	-033
7	+22	+43	+64	+66	+62	+67		+006	+018	+028	-014	-039	-010	-006	-030	+015	-041	+001
8	+30	+47	+55	+60	+48	+70	+46		-056	+025	+061	+008	+016	-010	+013	+053	+002	-086
9	+39	+31	+32	+28	+20	+31	+29	+30		-082	+011	-040	-013	+026	+031	+069	+028	-114
10	+22	+51	+64	+55	+60	+71	+65	+50	+40		+043	+050	+001	+058	+020	-079	-008	+003
11	+06	+26	+40	+45	+40	+69	+46	+55	+13	+62		-053	+065	-018	-032	+030	-046	+012
12	+22	+29	+31	+25	+22	+28	+43	+12	+35	+31	+20		-016	-033	+055	-031	+023	+022
13	+28	+50	+54	+55	+53	+72	+60	+54	+30	+66	+43	+29		-004	-018	-008	-012	-043
14	+35	+08	-19	-11	-06	-07	0	-10	+25	+05	-03	+19	-06		-015	-009	-020	+051
15	+14	+55	+76	+67	+68	+77	+71	+62	+17	+71	+64	+17	+67	-20		+026	+030	+044
16	+30	+63	+66	+69	+46	+70	+55	+60	+22	+73	+46	+25	+64	-11	+70		+061	-018
17	+41	+40	+63	+74	+53	+64	+53	+62	+37	+50	+30	+30	+55	-02	+64	+67		+084
18	+09	+20	+43	+46	+37	+43	+50	+21	+06	+45	+49	+30	+40	+15	+49	+29	+49	

Lower Left: The Correlation Matrix
Upper Right: The Residual Matrix

TABLE 5.2

THE FACTOR PATTERN

	I	II	III	IV	V
1	+437	-560	+221	+052	+158
2	+648	-277	+257	-224	-145
3	+781	+193	+109	+154	-236
4	+777	+198	+139	+250	+082
5	+690	+194	-104	+128	-153
6	+863	+181	+054	-149	+101
7	+781	+083	-197	+106	-170
8	+703	+144	+307	-105	+214
9	+432	-403	+030	+055	-023
10	+816	+060	-138	-192	-170
11	+617	+286	-279	-353	+290
12	+420	-310	-244	+130	-156
13	+758	+090	+060	-140	+107
14	+040	-544	-261	+043	+212
15	+826	+385	+038	-093	-116
16	+785	+124	+252	-155	-049
17	+773	+034	+233	+345	+158
18	+540	+127	-400	+147	+170

TABLE 5.3

DIRECTION NUMBERS

	2	11	12	15	17
I	+648	+617	+420	+826	+773
II	-277	+286	-310	+385	+034
III	+257	-279	-244	+038	+233
IV	-224	-353	+130	-093	+345
V	-145	+290	-156	-116	+158

TABLE 5.4

THE T-MATRIX

	2	11	12	15	17
I	+8139	+7129	+6874	+8938	+8659
II	-3479	+3305	-5074	+4166	+0381
III	+3228	-3224	-3994	+0411	+2610
IV	-2813	-4079	+2128	-1006	+3865
V	-1821	+3351	-2553	-1255	+1770

TABLE 5.5

THE Φ^{-1} MATRIX

+2.334400	+ .289645	- .840114	-1.149851	- .333900
	+2.593485	- .212155	-2.562639	+ .658548
		+1.657801	+ .453146	- .550156
			+5.065196	-2.099272
				+2.749390

TABLE 5.6

$T'T = \Phi$

1.0000	.4149	.5937	.6469	.6348
	1.0000	.2788	.7606	.4474
		1.0000	.3972	.5087
			1.0000	.7394
				1.0000

TABLE 5.7

$T\Phi^{-1}$

+2121	+ 2186	+2332	+ 2582	+ 3239
-7819	- 1784	-4512	+1.3534	- 1568
+8613	- 5914	-9899	- 0657	+ 5310
-9699	- 6722	+4174	+ 1442	+ 9821
-0284	+1.3087	-4956	-1.7723	+1.1720

TABLE 5.8

THE Λ MATRIX

+1388	+1357	+1811	+1147	+1953
-5118	-1108	+3504	+6014	-0946
+5638	-3672	-7688	-0292	+3202
-6329	-4174	+3242	+0641	+5923
-0186	+8126	-3849	-7875	+7068

TABLE 5. 9

FΛ = V

	A	B	C	D	E
1	+502	+147	+061	-414	+352
2	+521	000	000	000	000
3	-022	-211	+131	+398	+093
4	-075	-004	+014	+156	+383
5	-140	-068	+237	+328	+050
6	+150	+222	-036	+117	+152
7	-108	-013	+364	+286	+024
8	+260	+185	-276	-017	+311
9	+249	+051	+223	-172	+148
10	+130	+097	+236	+256	-125
11	000	+538	000	000	000
12	000	000	+474	000	000
13	+180	+216	-027	+046	+151
14	+106	+316	+331	-479	+151
15	000	000	000	+411	000
16	+287	+025	-126	+186	+096
17	000	000	000	000	+538
18	-312	+283	+343	+025	+172

TABLE 5. 11

THE SIMPLIFIED FACTOR PATTERN

	A	B	C	D	E
1	+50			-41	+35
2	+52				
3		-21		+40	
4					+38
5			+24	+35	
6		+22			
7			+36	+29	
8	+26		-28		+31
9	+25		+22		
10			+24	+26	
11		+54			
12			+47		
13		+22			
14		+32	+33	-48	
15				+41	
16	+29				
17					+54
18	-31	+28	+34		

TABLE 5. 12

VECTORS IN VARIOUS 3-SPACES

3-Space	Vectors Found in the 3-Space
BCD	3, 5, 6, 7, 10, 11, 12, 13, 14, 15
ACE	2, 4, 8, 9, 12, 16, 17
ABC	2, 6, 9, 11, 12, 13, 16, 18

SECTION IV

SUMMARY AND CONCLUSIONS

1. Introduction. In this section we shall briefly review and summarize the problem, and the data, technique, and findings reported in the preceding sections.

2. The Problem. This study seeks to determine whether there are characteristic personality differences between good and poor teachers. Specifically, the questions to be answered are:

1. Are there characteristic differences between ratings on Cattell's surface traits for good and poor teachers?

2. Are there characteristic response patterns for Cattell's 16 PF test for good and poor teachers?

3. The Subjects. The subjects for this study were 32 individuals who had graduated from a four-year teacher-training program and who were engaged in their first year of high school teaching.

4. The Data.

4.1 The Criteria of Teaching Success. Two criteria of teaching success were used in this study: expert opinion of teaching performance, and acceptability of the teacher to his principal or supervisor.

4.2 The Evaluation of Personality. Two methods were used to evaluate personality: Cattell's 16 test and three paired-comparison rating scales. The former was meant to evaluate Cattell's source traits; the latter, the surface traits. It was thought that certain surface traits would be best known to a friend of the subject, others to a supervisor or superior, and still others could best be assessed by interview. Ratings on three specific groups of surface traits were obtained for each subject, one group from each source.

5. The Methodology. It was judged that characteristic differences between good and poor teachers would be most prominent if the extremes of the group were examined: the ten best and the eight poorest teachers. To determine if the responses and ratings of the two groups were different, Fisher's discriminant function was used. This function, which is a linear function of the observations, distinguishes better than any other linear function between the specified groups on whom common measurements are available.

In addition a method of factor analysis was adopted to study each profile of responses to the 16 PF test as an entity, to determine whether distinctive response patterns exist for good and poor teachers.

6. The Findings.

6.1 The Criterion of Teaching Success. For the 32 subjects the correlation between the three measures of teaching success were high, and sufficiently alike so that the differences observed could have occurred by chance through random sampling from the same normal population. Accordingly, it was concluded that the evidence is not sufficient to show that teaching acceptability and efficiency are, operationally, distinctive measures of success in teaching.

6.2 The Relation Between Personality and Teaching Success.

4.21 The Surface Traits. No distinctive patterns for good and poor teachers were evident for those traits assessed by interview. Patterns were indicated for the traits assessed by a supervisor or superior, and by a friend, but the indications were general.

4.22 The 16 PF Test. Use of the discriminant function for the 16 PF test indicated that the good and poor groups had, within broad limits, characteristic response patterns, and that average teachers had these same patterns as well as others. The outcome suggested that there were probably several patterns of response for the good teachers; and several, for the poor.

A factor analysis of the data indicated with more certainty than the discriminant function that the responses of good and poor teachers did not fall into two well-defined and characteristic patterns, but that several patterns existed for the good teachers; and probably, several for the poor. The analysis suggested that some good teachers differ from some poor teachers in the responses associated with Cattell's source traits F, H and N. Using Cattell's terminology, it appears that good teachers are likely, more than poor teachers, to be gregarious, adventurous, frivolous, to have abundant emotional responses, strong artistic or sentimental interests, to be interested in the opposite sex, to be polished, fastidious and cool. Poor teachers are more likely than good teachers to be shy, cautious, conscientious, to lack emotional response and artistic or sentimental interests, to have a comparatively slight interest in the opposite sex, to be clumsy, easily pleased, and more attentive to people.

6. Implications of the Study. The results of the study imply that good teachers are good for different reasons, and that poor teachers fail for

varying reasons. This is hardly a revolutionary idea, yet it does help point up the difficulty of predicting teaching success, and suggest a line of attack on the problem.

It appears that success may be a "balance", and that to predict it one must understand what is required for the balance. If this is true, the prediction of teaching success required more than a study of the association of various traits and characteristics, one by one, with success; it also requires an examination of patterns in the Gestalt sense. It may be that on some such basis the accuracy of prediction may be improved.

It is interesting to note that while the analyses undertaken here were by no means extensive enough to provide a test for Cattell's theory of personality, the findings are intelligible in terms of common experience. Obviously, the theory has not proved unsuited for the use made of it.

6. Suggestions for Further Research. Specifically, it appears that both the 16 PF test and the factor analytic technique employed are sufficiently promising to be worth further investigation. It would be instructive to use them for another group of good and poor teachers to discover how the results would compare with those obtained in this study. At the same time, friends' ratings on surface personality traits might also be checked for the new subjects. In this way, the findings made in this study might be verified and extended.

It would also be possible to use, for a new study, those items shown as having the most discriminating power (as generally indicated by the absolute value of the coefficient in the discriminant function), to see whether an improved separation of the good, poor, and average groups could be obtained.

In general, it is clear that the problem of associating personality and teaching success is a challenging one. Research should be continued by any and all means until the promises and indications of this and other studies in the field can be presented as concise and objective findings in operational terms.

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